Tanaffos (2007) 6(2), 92-95

A Thirty – Year Old Man with Fever, Cough and Progressive Dyspnea

Majid Marjani [1], Shirin Karimi [2,3], Masoud Shamaei[1], Nader Heidar Zadeh[1], Mehrdad Bakhshayesh Karam [4], Payam Tabarsi [1, 3], Davood Mansoori[1,5]

[1] Department of infectious Diseases, [2] Department of Clinical Anatomical Pathology, [3] Mycobacteriology Research Center, [4] Department of Radiology, [5] Lung Transplantation Research Center, NRITLD, Shaheed Beheshti University of Medical Sciences, Tehran, Iran.

WHAT IS YOUR DIAGNOSIS?

A 30-year-old Iranian man was admitted to our hospital due to productive cough, chest pain, sweating and 14 Kg weight loss since three months ago. He developed fever and progressive dyspnea seven days ago.

The patient was a painter, 16 pack/year smoker, oral opium addict, with a history of incarceration. But he denied intravenous drug abuse. He was single and had not any sexual contact. He had a history of pulmonary tuberculosis seven years ago with complete cure after treatment for nine months.

In physical examination, he was cachectic with severe respiratory distress, unable to walk. The vital signs were: oral temperature: 39 ^{0}C; pulse rate: 108 / min; respiratory rate: 28/min and blood pressure: 120/80 mmHg. Oxygen saturation rate was 73% with ambient air. Heart sounds were normal. Fine crackles were heard in both lungs .Peripheral cyanosis was present and a tattoo was seen on his right hand. There was no further abnormal clinical finding.

The results of the laboratory tests were: total leukocyte count: 6900 cell /µl with 82% neutrophils, 6% band cells and 12% lymphocytes, hemoglobin: 13.1 gr/dl, platelet: 280000 cell /µl; normal liver function tests, biochemistry and electrolytes.

Chest X- ray (Figure 1) and high resolution lung CT Scan (HRCT) were obtained (Figure 2).Bronchoscopy, bronchoalveolar lavage and transbronchial lung biopsy were performed. ***(Tanaffos 2007; 6(2):92-95)***

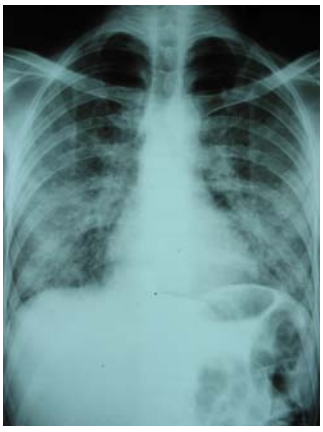

Figure 1. Chest X-ray of the patient

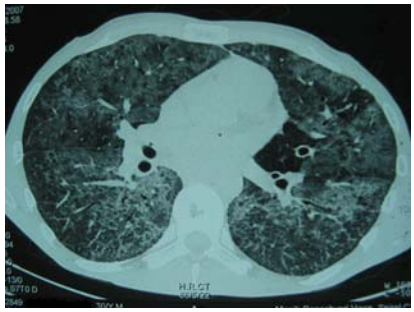

Figure 2. Lung HRCT

Correspondence to: Mansoori SD
Address: NRITLD, Shaheed Bahonar Ave, Darabad, TEHRAN 19569, P.O:19575/154, IRAN
Email address: dmansouree@yahoo.com

Tanaffos (2007) 6(2), 93-95

Diagnosis: Pneumocystis Jirovecii Pneumonia

Chest X-ray demonstrated bilateral fluffy alveolar densities in midzone of the lungs and parahilar peribronchial infiltrations were also seen (Figure 1).

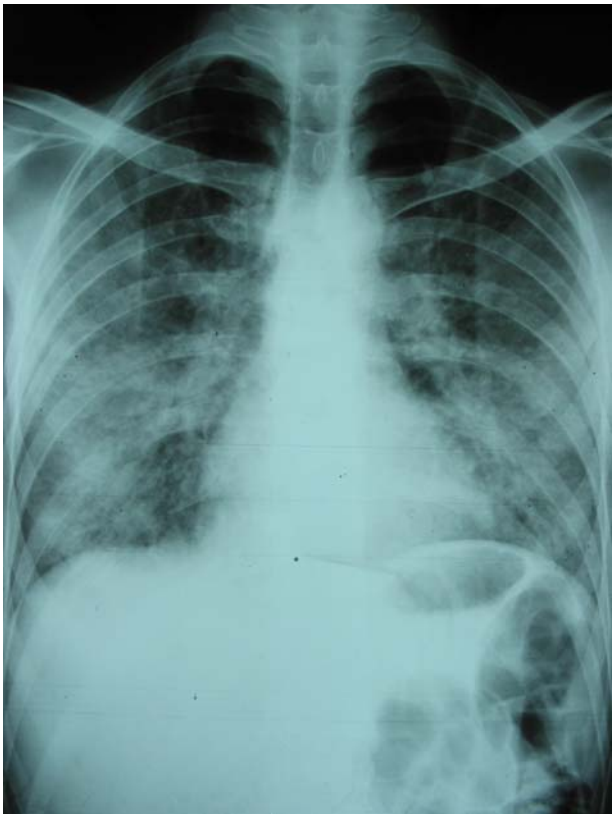

Figure 1. Bilateral diffuse infiltration in 1st chest X-ray

High resolution computed tomography (HRCT) of the lung revealed bilateral nonhomogeneous ground glass opacities in mid and upper zones of the lungs. Mild bilateral peribronchial wall thickening was also seen (Figure 2). These findings were suggestive of Pneumocystis Jirovecii Pneumonia (1, 2).

Smear of bronchoalveolar lavage (BAL) for pneumocystis was suspicious. Transbronchial biopsy revealed mild distortion of alveolar architecture and prominent intra-alveolar deposition of foamy eosinophilic exudates. Immuno-histochemistry staining with monoclonal antibody was strongly positive for Pneumocystis (Figure 3).

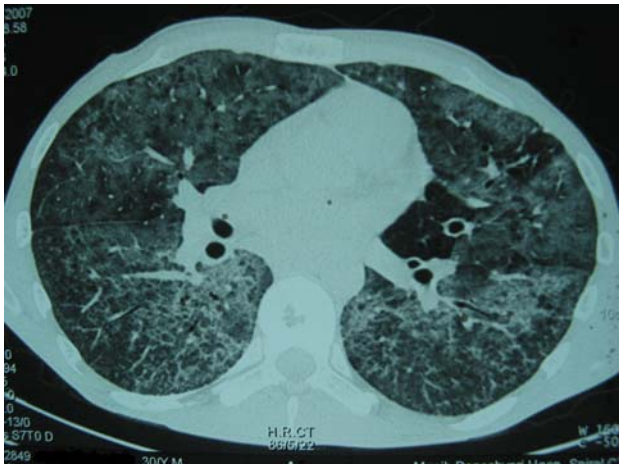

Figure 2. Extensive ground glass attenuation on lung HRCT

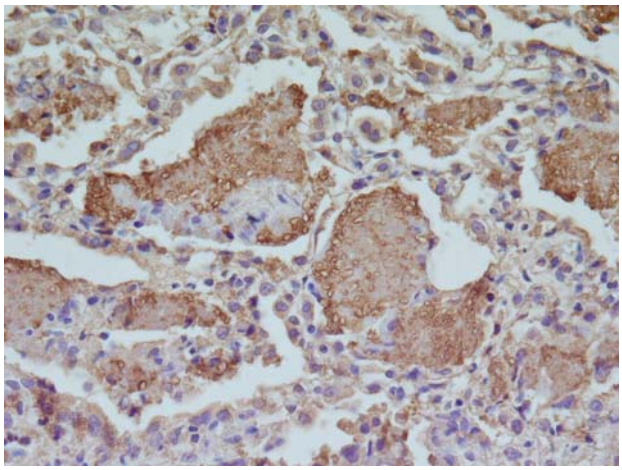

Figure 3. Immunostaining showing clusters of organisms in the alveoli

Acid fast staining of sputum and BAL was negative, but PCR for cytomegalovirus (CMV) was positive in BAL.

The serology for human immunodeficiency virus (HIV) including both enzyme-linked immunosorbent

assay (ELISA) and Western blot reported to be positive. Absolute CD4+ T cell count was 6/µl. The patient was interviewed in detail and acknowledged that he had intravenous drug abuse for a short period ten years ago with sharing syringes.

Pneumocystis pneumonia (PCP) is often the acquired immunodeficiency syndrome (AIDS)-defining illness in patients infected with HIV, occurring most frequently when the T-helper cell count (CD4+) is less than 200 cells per cubic millimeter.(1) Incidence of PCP has declined substantially with widespread use of prophylaxis and effective antiretroviral therapy (ART). The majority of cases occur among patients who are unaware of their HIV infection or not receiving ongoing HIV care or those with advanced immunosuppression(3).

Most people infected with HIV are not recognized in countries such as Iran and PCP may be the first presentation of their HIV infection.

Isolation of CMV from BAL specimens is relatively common, yet most of these patients have an alternative diagnosis (especially pneumocystis or bacterial pneumonia) and may improve without specific therapy directed at CMV. Nonetheless, in a patient with advanced HIV disease, interstitial infiltrates on chest X-ray, and no established alternative diagnosis, CMV may be the sole responsible pathogen. (4) This diagnosis is confirmed often when histopathology demonstrates intracellular inclusions typical of CMV (5), which was not seen in our patient.

The patient was treated with thrimethoprim-sulfamethoxazole (TMP/SMX) 15 mg/kg/day (TMP) and prednisolone 40 mg orally twice daily. After 2 days, his condition improved dramatically and the treatment was continued for 3 weeks with tapering of steroid.

Chest X-ray on the 6th day of treatment showed marked improvement (Figure 4).

Antiretroviral therapy (ART) with zidovudine, lamivudine and nevirapine and weekly azithromycin (1250 mg) for the very low CD4 count were initiated and the TMP/SMX was continued in a prophylactic dose.

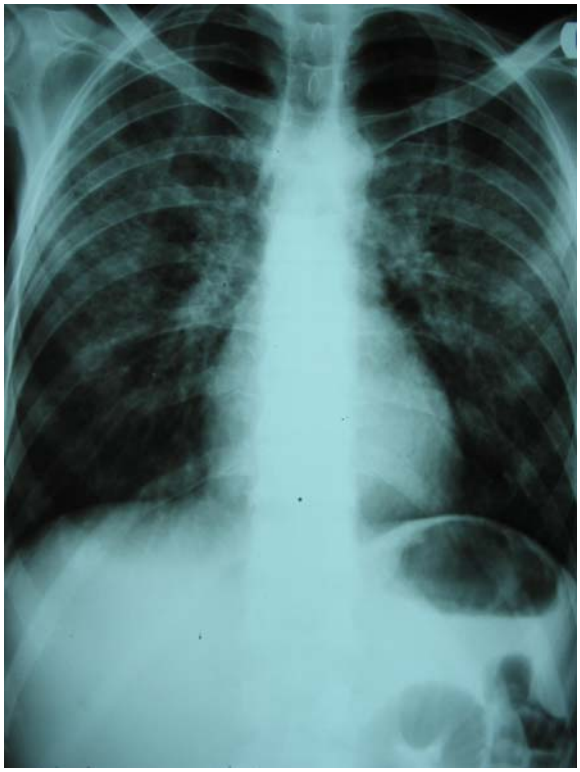

Figure 4. Marked improvement in 6th day chest X-ray

In conclusion, we recommend considering HIV infection in differential diagnosis of all patients with history of opium addiction, even if the patient denies any intravenous abuse, particularly when they present with opportunistic infections such as Pneumocystis.

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