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Pulmonary Nodular Lesions in a Renal Transplant Recipient

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WHAT IS YOUR DIAGNOSIS?

A 54 year-old diabetic man, who had received a renal transplant two years ago due to diabetic nephropathy, was referred to our center. The allograft had a good function and creatinine level was normal.

He was febrile since 2 months ago and had non-productive cough. He was admitted and evaluated in another center. No abnormality was found in his chest x-ray at that time and the fever subsided with empirical treatment consisting of vancomycin, imipenem and ganciclovir without any definite diagnosis. After discharge, the fever recurred with shaking chills and productive cough and pulmonary nodular lesions were found in the new chest x-ray (Figure 1).

He received immunosuppressive regimen consisting of cellcept 500 mg, twice daily, prednisolone 10 mg daily and cyclosporine 225 mg daily in divided doses. Serologic studies for HIV, HCV and HBV as well as the PPD test were negative at the time of transplantation but anti-CMV and anti-EBV IgG antibodies were positive. We did not find any abnormality except for macular purple lesions in distal part of extremities. The results of laboratory tests were:

Total leukocyte count: 8,200 cell/µl with normal differentiation, hemoglobin: 10.3 gr/dl, platelet count: 320,000 cell/µl and normal liver function tests, biochemistry and electrolytes. PPD test, multiple blood and urine cultures and plasma CMV-PCR were negative. Anti-nuclear antibody (ANA), anti-ds DNA and (C-P) ANCA were negative. Sputum smears for acid fast bacilli and culture for routine bacteriology were negative. Lung CT-Scan was also performed (Figure 2). **(Tanaffos 2009; 8(1): 85-87)**

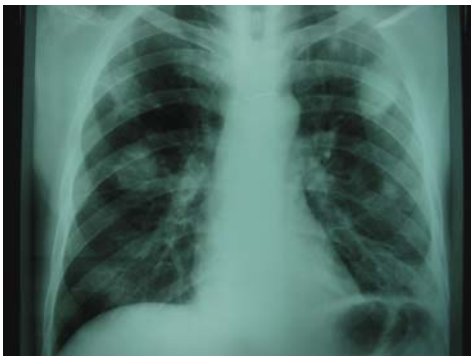

Figure 1. Pulmonary nodular lesions on chest x-ray

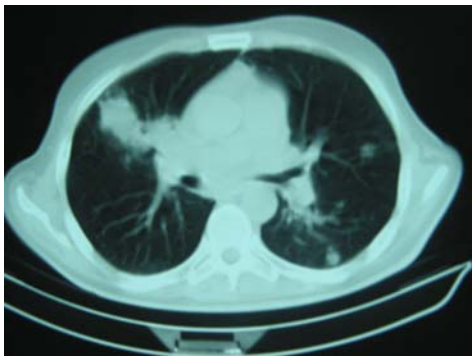

Figure 2. Lung CT-Scan obtained after admission

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Diagnosis: Pulmonary Tuberculosis

Lung CT scan demonstrated multiple bilateral nodules. Bronchoalveolar lavage (BAL) specimen revealed acid fast bacilli and after two months, culture was positive for *Mycobacterium tuberculosis*. Skin biopsy was performed from the affected area which revealed leukocytoclastic vasculitis. Considering the associated systemic vasculitis, a CT-guided biopsy of pulmonary lesions was done which was not diagnostic. Therefore, open lung biopsy was performed and histopathological study demonstrated chronic granulomatous inflammation associated with necrosis.

Incidence of tuberculosis is high among renal transplant recipients especially in developing countries (1), varying from 1% to 15%, 20-70 times more common than in general population. (2,3) In a study in Iran on 1350 kidney transplant recipients, tuberculosis occurred in 3.9% of them and was diagnosed in 65% of these patients after the first year post transplantation. (4) Clinical manifestations are frequently atypical; therefore, aggressive investigation must be performed for early diagnosis, because mortality rate is very high (up to 30%) (1, 3).

Differential diagnosis of fever and pulmonary nodular infiltrates in solid organ recipients includes bacterial infections i.e. Legionella and pulmonary edema in acute illness, and tuberculosis, nocardiosis, fungal infections especially invasive pulmonary aspergillosis, Pneumocystis jiroveci pneumonia and post transplant lymphoproliferative disease (PTLD) in sub-acute or chronic illness (5). Treatment of tuberculosis in transplant recipients is problematic due to significant interaction between rifampin and immunosuppressive agents, especially cyclosporine A and tacrolimus; therefore, many authorities do not recommend it (3).

It is recommended to treat these patients for at least 12 months (1). Isoniazid is effective and safe for prophylaxis of tuberculosis in PPD positive recipients of renal transplant (6).

The patient was treated with a combination of isoniazid, pyrazinamide, ethambutol and ofloxacin for two months and then INH and ethambutol were continued for ten months. The bacilli were sensitive to all first line anti – tuberculous drugs except for streptomycin. The patient responded well to treatment clinically and radiologically (Figure 3).

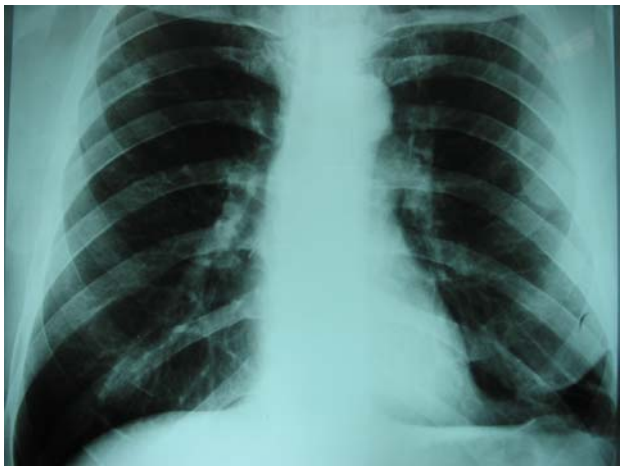

Figure 3. Chest x-ray obtained ten months after the treatment.

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