Galloping Caseous Pneumonia with Miliary Dissemination in a Renal Transplant Recipient: Emphasis on Pretransplant Detection and Prophylaxis

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Dear Sir,

Screening of renal transplant candidates for tuberculosis has not been routinely practiced in the United States because of its low prevalence in the general population [1]. Presented here is a patient with end-stage renal disease who developed galloping caseous pneumonia with systemic dissemination 2 months after renal transplantation and expired. Should pretransplant screening and pre- or post-transplant prophylaxis for tuberculosis be carried out, such tragedy could certainly be avoided.

A 56-year-old man was diagnosed to have idiopathic membranous glomerulonephritis in 1977. He was treated medically until February 1986, when he started hemodialysis therapy. In September 1990, the patient underwent a cadaveric renal transplantation. Two immunosuppressive drugs, ciclosporin and prednisone, were used throughout his hospitalization. Immediate postoperative course was complicated by intestinal obstruction with abdominal distention. Colonoscopy was then performed but no mass lesion was found throughout the entire large intestine. The procedure was complicated by perforation of the sigmoid colon which required emergency repair. Meanwhile, blood urea nitrogen and creatinine rose. The patient was then treated with additional immunosuppressive agent OKT3. Renal function improved with OKT3 therapy. However, peripheral lymphopenia with absolute lymphocyte count ranging from 28 to 800/mm³ persisted. Two months after transplantation, the patient started to spike fever. Cytomegalic inclusion disease was suspected and the patient was treated with an antiviral agent, gan-ciclovir, in addition to antibiotics. His immunosuppressive medication was also tapered. Repeated blood and sputum cultures up to the time of his demise grew neither viruses nor bacteria. Bilateral pulmonary reticulonodular infiltrate was noted 2.5 weeks after the onset of fever. Skin tests for trichophyton, mumps, Candida and tuberculosis were all negative. Bronchoscopy was attempted but unsuccessful because the patient could not tolerate the procedure. The infectious disease consultant raised the possibility of mycobacterial infection and suggested initiation of antituberculous therapy. The patient, however, developed sepsis syndrome and expired 3 months after the transplantation.

At autopsy, the contracted native kidneys showed acquired or dialysis-associated cystic disease. The kidney allograft revealed no evidence of rejection. However, many small poorly-

formed granulomas composed of few epithelioid cells and Langhans' giant cells with or without central caseation necrosis were present. Acid fast bacilli were easily found in such necrotic areas. The lungs were diffusely consolidated with scattered nodular lesions ranging from very small to 2 cm in diameter. Such nodular lesions were, in fact, areas of caseation necrosis surrounded by a rim of neutrophils and foamy alveolar macrophages. Epithelioid cells and Langhans' giant cells were virtually absent. Myriads of acid fast bacilli were found intra- and extracellularly not only in the areas of caseation necrosis but also in those alveolar spaces which contained only proteinaceous fluid. Miliary dissemination was found in the liver, spleen and bone marrow in addition to the kidney allograft just described. Postmortem lung culture grew *Mycobacterium tuberculosis*.

In highly endemic areas, one fifth of renal transplant recipients may develop tuberculosis [2]. The incidence in most developing countries ranges from 1.2 to 6.4% (table 1) [1-10]. On the basis of a survey of 26 transplantation centers in the United States, it is estimated that the minimal tuberculosis rate among renal transplant recipients is 480 cases per 100,000 (0.48%), a 36.6-fold increase over 13.1 per 100,000 in the general population [1]. At the University of Alabama Hospital, Birmingham, Ala., USA, there were 24 cases of renal transplantation among 3,025 autopsy cases performed during the past 8 years, the present case is the only patient who developed tuberculosis after renal transplantation. This represents an incidence of 4% which is much higher than the national average and could be due to the higher prevalence of tuberculosis in our region. It is, therefore, important to stress that in the endemic area,

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mycobacterial infection should be included in the differential diagnoses in any renal transplant recipient who develops febrile disease.

Tuberculosis is a treatable disease. Successful management of miliary tuberculosis after renal transplantation is nowadays considered as a rule rather than an exception [11]. Early detection of tuberculosis infection is, therefore, mandatory. It is recommended that pretransplantation evaluation should include a PPD skin test. A sufficient course of chemoprophylaxis either before or after transplant surgery has been shown to be beneficial to those patients who have positive PPD [3, 12]. A negative skin PPD test cannot rule out tuberculosis as demonstrated in our patient. Vigorous search for mycobacterial infection is indicated.

Table 1. Geographic variation of the incidence of tuberculosis among renal transplant recipients

Country

Percentage

Reference

21

6.4

6.0

4.5

4.2

1.2

1.2

0.9

0.65

0.48

3 4 5 6

1

2 7 8 9 10

No. of patients Tbc/total

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