Tuberculous Interstitial Nephritis of the Renal Graft

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Dear Sir,

A 36-year-old female received a second cadaveric graft in May 1989; immunosuppression was prescribed with cyclosporine A and prednisone. The patient presented proteinuria (1.8 g/24 h) for the first time in October 1991 and renal function was stable with a serum creatinine around 1.2-1.4 mg/dl. In April 1992, she noticed fever (38.5-39°C), chills and general malaise together with a progressive increase in plasma creatinine (5.6 mg/dl) and leukocyturia with negative urine culture. The chest X-ray was normal and no sputum specimen for culture could be obtained. Löwenstein culture of urine was positive for *Mycobacterium tuberculosis*. Funduscopic examination of the eyes was normal. A renal biopsy showed changes of chronic rejection and interstitial granulomatous nephritis (fig. 1, 2). The patient was treated with isoniazide, pyrazinamide and ethambutol. The following days there was an improvement of the renal function with a late impairment after several months.

Mycobacterial infections became, in the last years, an important health problem, mostly due to an increasing number of patients with a deficiency in cell-mediated immunity, as it occurs in graft recipients [1-3]. In these patients, hematogenous dissemination, extrapulmonary involvement [4], atypical mycobacteriae and other coexisting infections occur more frequently [4-6]; mortality is higher (30%) than in non-immunosuppressed patients, there is increased morbidity related to graft rejection (37%) [7] and treatment is peculiar due to interaction of tuberculostatic agents with cyclosporine A and steroids [8, 9]. Isolated interstitial nephritis of the renal graft is an infrequent extrapulmonary manifestation of tuberculosis [10], characterized by late onset after transplantation (21-26 months), fever, deterioration of renal function and interstitial granulomatous nephritis without pulmonary or systemic tuberculosis. Usually there is an initial improvement of

Fig. 1. A Interstitial granulomas (arrows), some of them with central necrosis (stars). HE × 113.

B Glomerulus with an ischemic appearance and granulomas in interstitium (*). HE × 113.

Fig. 2. A Increased mesangial matrix and microaneurysmatic dilatations of peripheric capillaries. PAS $\times$ 270. B Glomerular capillary with fusion of podocytes and marked enlargement and duplication of basal membrane (arrows) with mesangial interposition (*). Uranyl acetate and lead citrate. $\times$ 15,284.

renal function coincident with the beginning of therapy followed by gradual deterioration of renal function in the next few years, probably related to chronic rejection.

It is possible that cellular injury due to rejection exposes the latent tuberculous bacilli inside the macrophages to the immune system, inducing reactivation of latent tuberculosis in the graft, with granuloma formation locally in the kidney, without active infection in other organs.

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