Case Report

Nodular glomerulosclerosis after renal transplantation without diabetes mellitus

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Introduction

Nodular glomerulosclerosis is a well-described lesion of diabetic nephropathy. Although it was considered pathognomonic for this entity, nodular glomerulosclerosis has been also reported in the absence of overt glucose intolerance [1–6]. In addition, rare cases of de nova nodular glomerulosclerosis have been reported in patients who developed post-transplant diabetes mellitus [7].

The purpose of this paper is to describe a renal transplant patient with typical lesions of diabetic nodular glomerulosclerosis without past or present glucose intolerance.

Case report

A 24-year-old man presented in 1994 with nephrotic-range proteinuria of 1 year’s evolution. In 1986 he had received a cadaveric renal graft due to chronic renal failure secondary to bilateral ureterohydronephrosis. Immunosuppressive therapy consisted of low-dose prednisone, cyclosporin (6 mg/kg per day) and azathioprine (1 mg/kg per day). On admission, blood pressure was 120/70 mmHg, physical examination was unremarkable and oedema was absent. Serum creatinine was 1.9 mg/dl and proteinuria ranged from 70 to 80 mg/kg per day. Glycosuria was absent and urinary sediment showed isolated hyaline casts and 40–50 erythrocytes per high-power field. Total protein was 6.1 g/dl and serum albumin was 3.3 g/dl. The results of an oral glucose tolerance test were 92, 161, 169, 123 and 116 mg/dl at baseline, 30, 60, 90 and 120 min respectively. Serum IgG, IgA, IgM, serum and urine immunoelectrophoresis, antinuclear antibodies, C3, C4, CH50, virus C and B markers were negative or within normal limits. Antineutrophil cytoplasmic antibodies were also negative. Haemoglobin A1c was 4% (normal < 5.4%).

A percutaneous renal biopsy was performed. Renal tissue contained 15 glomeruli with diffuse thickening of the glomerular basement membrane as well as increase in mesangial matrix in each. In addition, mesangial hyaline nodular lesions were present in seven glomeruli (Figure 1). No tubulointerstitial or vascular damage was observed. Immunofluorescence staining with IgG, C3, kappa and lambda light chains was negative. Congo red staining for amyloid was also negative. Electron-microscopy (tissue obtained from paraffin) revealed irregular, marked, uniform thickening of the basement membrane and increased mesangial matrix. Immune deposits were absent (Figure 2).

One year later, the patient is normotensive. Serum creatinine is 5 mg/dl, proteinuria has ranged from 0.4 to 4 g/day with normal total protein and serum albumin. Fasting blood glucose has remained normal.

Discussion

Nodular glomerulosclerosis without glucose intolerance has been reported in patients with native kidneys [2–5]. Nodular glomerulosclerosis secondary to post-transplant diabetes mellitus has also been reported [7–9]. To our knowledge, this is the first report con-
course of this condition. A favourable outcome has been reported in only one case [5]. In any case, further studies are needed to define the nature and course of this new entity.

References


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