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DE NOVO FOCAL SEGMENTAL GLOMERULOSCLEROSIS AND RECURRENT IgA NEPHROPATHY IN A RENAL TRANSPLANT RECIPIENT

BİR RENAL TRANSPLANT ALICISINDA DE NOVO FOKAL SEGMENTAL GLOMERULOSKLEROZ VE TEKRARLAYAN IgA NEFROPATİSİ

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SUMMARY

*Recurrent or de novo glomerulonephritis are major causes of allograft dysfunction in the early and late period after renal transplantation. Recurrence of focal segmental glomerulosclerosis (FSGS) **in** renal allograft is clearly known in the patients with FSGS. However, occurence of de novo FSGS which has a more favorable clinical course is reported infrequently. In this case, a de novo FSGS complicating recurrent IgA nephropathy on renal allograft is presented.*

ÖZET

Rekürran veya de novo glomerulonefrit renal transplantasyon sonrası erken ve geç dönemdeki allograft disfonksiyonunun major nedenlerdendir. Renal allograftta fokal segmental glomeruloskleroz. (FSGS)'un nüksii FSGS'li hastalarda bilinen bir olgudur. Bununla beraber de novo FSGS gelişimi nadir olarak bildirilmiştir. Burada, renal allograftta rekürran IgA nefropatisi ile komplike olmuş bir de novo FSGS olgusu sunulmuştur.

Key Words: Renal transplantation, de novo focal segmental glomerulosclerosis

Anahtar Kelimeler: Renal transplantasyon, de novo fokal segmental glomeruloskleroz

INTRODUCTION

Allograft dysfunction may appear in early or late period after renal tranplantation. Mainly reasons of allograft dysfunction are acute tubular necrosis in early period, cyclosporine toxicity, rejection and vesicoureteral reflux in late period. Recurrent or de novo glomerular diseases are seen infrequently. Systemic diseases such as diabetes mellitus, amyloidosis, oxalosis, sistinosis may also recur in allograft (1). In this study, a case of de novo focal segmental glomerulosclerosis complicating recurrent IgA nephropathy on renal allograft recipient is presented.

CASE

A 35 year old man had end stage renal disease due to IgA nephropathy. He had received hemodialysis therapy for along five years. He had a kidney transplant from his father, seven years ago. The course in the early posttransplant period was uneventful. He had been on triple immunosuppressive therapy including cyclosporine-A, azathiopurine and prednisolone at the beginning. However, steroids had to be discontinued in the seven months after transplantation due to the development of avascular necrosis in head of right femur. After a smooth course of 84 months, hypertension and proteinuria appeared (2.5 g/24 h) and serum creatinine level increased to 2.2 mg/dl.

Physical examination findings: His clinical state was normal. There was pretibial edema. Arterial blood pressure was 130/80 mm Hg. Graft and other system examinations were evaluated normally.

Laboratory findings: Leucocyte was found rarely in urinary sediment. Esbach: 3250 mg/d, erythrocyte sedimantation rate: 63 mm/h, glucose: 99

***This** case has been presented b\poster in 1" World Kidney Congress ofIFKF, Nevşehir (6-9 September, 2000).*

mg/dl, BUN: 39 mg/dl, creatinine: 2.2 mg/dl, uric acid: 7.9 mg/dl, Ca: 9.7 mg/dl, P: 3.7 mg/dl, total protein: 7.2 g/dl, albumin: 3.5 g/dl, total cholesterol: 255 mg/dl, triglycerid: 182 mg/dl, Hb: 13.2 g, Hct: 40.1%. Creatinine clearance was 60 ml/dk. Kidney dimensions, their parenchymal echogenity and pelvicalicial system were found normal by ultrasound.

Clinical course: Since there were massive proteinuria and azot retention, allograft biopsy was performed for definite diagnosis. At the biopsy speciment, 25 glomeruli were noted. While 10 of the glomeruli was global sclerotic, 7 had typical lesion of segmental sclerosis **(Figure-1).** Increased mesangial matrix was underlined in the remaining glomeruli and cellulary crescent was demonstrated in one. Granular mesangial IgA and C3 accumulation were shown in five glomeruli by immunofluorescence method indicating the recurrence of original disease. IgA positivity was also showed by immunohistochemistry **(Figure-2).** Therefore, 50 mg losartan+12.5 mg hydroclorothiazid was started. After nine month, proteinuria was disappeared. Graft function was not broken in the end of second years of therapy.

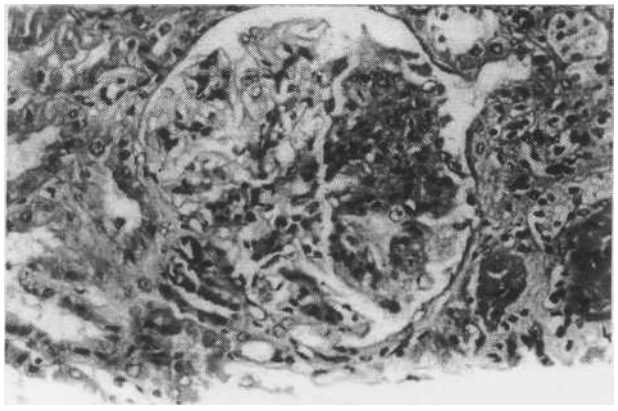

Figure 1. Typical segmental sclerotic lesion (Hematoxylen-Eozinx310)

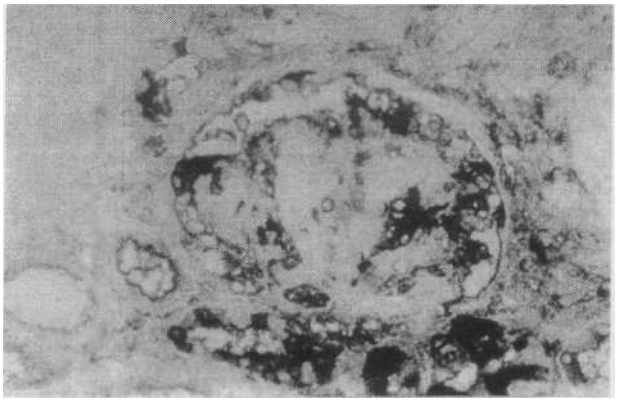

Figure 2. IgA positivity in mesangial area by immunohisto-chemistry (IgAx310)

DISCUSSION

The true frequency of allograft glomerulonephritis (GN) (recurrent or de novo) is unknown; a rough estimate is 5-15% (2). Recurrence of primary renal diseases such as membranoproliferatif GN (particularly, type II), IgA nephropathy (30-60%), Henoch-Schönlein purpura (50%), membranous nephropathy (MN) (10%), systenjic vasculitis and idiopathic rapidly progressive glomerulonephritis (10-20%), hemolytic uremic syndrome (0-50%) and focal segmental glomerulosclerosis (FSGS) (25-100%) may be seen in allograft (3, 4, 5). Although recurrent IgA nephropathy is seen frequently, graft loss is rare.

De novo glomerulonephritis in renal transplant recipients is also rarely encountered. De novo MN and FSGS are the most common form of de novo glomerulonephritis. Frequency of each form has been reported as 1-9% (2, 6). It is known that insidence of recurrent FSGS is high and this risk increases progressively after every transplantation. However, de novo FSGS after renal transplantation is also seen (5, 7). Recurrent FSGS is more frequent in recipients who less than 15 years old. Cases of de novo FSGS are also seen commonly in children renal transplant recipients. It is thought that immature glomeruli were exposed with adult glomerular filtration rate. Segmental sclerotic lesions are formed due to damage of glomerular capillary membranes associated with hemodynamic stress. Typical clinical marker is proteinuria in recurrent and de novo FSGS. While proteinuria appears in 1-2 months, sometimes 1-2 days after transplantation in recurrent FSGS, it is seen after months in de novo FSGS (6). Proteinuria had been begun end of the posttransplant seventh years in our case. Graft loss develops very quickly in recurrent FSGS. The patient returns to dialysis generally in the end of first years. However, There is a more slow progression in de novo FSGS (6). Proteinuria had been regressed in nineth months by losartan therapy in our case. At present, graft function lasts normally in the end of second years. In general, recurrent FSGS is found in juxtamedullary glomeruli. IgM and C3 accumulation could be seen in sclerotic lesions by immunofluorescence in this type. Whereas superficial cortical glomeruli is involved in de novo FSGS. Immunoglobulin and compleman is not found in sclerotic lesions. De novo FSGS generally develops due to secondary ischemic changes associated with atherosclerosis in chronic vascular rejection and chronic transplant glomerulopathy (6). However, graft atherosclerosis had not been determined in our case. Therefore, we thought that de novo FSGS has been complicated as secondary due to recurrent IgA nephropathy.

In conclusion, de novo FSGS may be accepted as uncommon a reason of graft failure. It should be distinguished from recurrent FSGS because of more slowly progression and better answer to therapy.

REFERENCES

1. Tornroth T: Recurrent and de novo glomerulonephritis in allografted kidneys: aspects of ultrastructural diagnosis. *Appl Pathol* 1987;5(2):88-94.
2. Leumann EP, Briner J, Donckerwolcke RA, Kuijten R, Largiader F: Recurrence of focal segmental glomerulosclerosis in the transplanted kidney. *Nephron* 1980;25(2):65-71.
3. Pinto J, Lacerda G, Cameron JS, Turner DR, Bewick M, Ogg CS: Recurrence of focal segmental glomerulosclerosis in renal allografts. *Transplantation* 1981;32(2):83-9.
4. Hariharan S, Peddi VR, Savin VJ, Johnson CP, First MR, Roza AM, Adams MB: Recurrent and de novo renal diseases after renal transplantation: a report from the renal allograft disease registry. *Am J Kidney Dis* 1998;31(6):928-31.
5. Parmjeet S. Randhawa, Anthony J. Demetris: Clinical aspects of renal transplantation pathology. In: Ron Shapiro, Richard L. Simmons, Thomas E. Starzl (eds), Renal Transplantation, Appleton&Lange, Stamford, Connecticut, 1997, 243-266.
6. Woolley AC, Rosenberg ME, Burke BA, Nath KA: De novo focal glomerulosclerosis after kidney transplantation. Am J Med 1988;84(2):310-314.
7. Ramos EL, Tilney NL, Ravenscraft MD: Clinical aspects of renal transplantation. Chapter 52, 2361-2407. Edited by Barry M. Brenner and Floyd C. Rector, The Kidney, Fourth edition, Volume II, W.B. Saunders Company, 1991.