Idiopathic Membranous Nephropathy in 2 Twin Brothers

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Dear Sir,

In a recent paper published in the June issue of Nephron, Sato et al. [1] described 2 adult brothers with idiopathic membranous nephropathy (IMN) and reviewed the reports on familial IMN published in the literature up until that time.

We wish to describe 2 male children, identical twins, with IMN who developed simultaneously signs of renal disease at the age of 5 years.

Case Reports

Case 1

In September 1981 the child was admitted to the hospital because of the onset of gross hematuria after an attack of influenza. Proteinuria (1.5 g/24 h) and hypercholesterolemia (474 mg/dl) were also discovered. Serum creatinine was 0.4 mg/dl. Therapy with prednisone 2 mg/kg/day for 4 weeks was followed by complete disappearance of laboratory abnormalities. Regular checks were carried out every 3 months, and everything was found to be normal. In June 1983 he presented a relapse of proteinuria (3.5 g/24 h) associated with peripheral edema.

Case 2

This child also had influenza in September 1981, and laboratory examinations were carried out. A slight proteinuria (0.10 g/24 h) and microscopic hematuria were discovered. Serum creatinine was 0.5 mg/dl. Two months later he developed a full nephrotic syndrome which worsened under the same treatment schedule as previously used in his twin brother. After prednisone withdrawal the nephrotic syndrome gradually disappeared within 4 months. A relapse of the nephrotic syndrome occurred in May 1983.

A renal biopsy was performed in the 2 children in June 1983. The diagnosis was stage II IMN in both of them (fig. 1). Immunofluorescence showed granular deposition of IgG and C3 along the capillary walls. On light microscopy glomeruli showed slight thickening of the basement membranes. Spikes were seen with silver methenamine stain. Electron microscopy revealed subepithelial deposits. Systemic lupus erythematosus, malignancy, diabetes mellitus, and exposure to glomerulotoxins or drugs were excluded. The HLA typing was A9 (23); 32; B35, blank; DR3, 5.

After the pathological diagnosis prednisone was started again only in case 1 and continued for 6 months until the disappearance of proteinuria. Case 2 was treated only with symptomatic therapy. He showed a spontaneous remission of proteinuria within 4 months.

At present, after a 4-year follow-up from the time of renal biopsy, the 2 brothers are 11 years old. They have a normal renal function. A slight proteinuria (0.15 g/day) is present only in case 2. Various studies suggest the relationship between IMN and certain HLA antigens. HLA class I DR3 has been found in adult Caucasian patients with a significantly greater frequency than in healthy subjects. This finding has been confirmed by a recent paper [2] which describes the distribution of HLA-A, B, and DR antigens in a group of 55 adult patients from England. The 2 children in the present study shared the same HLA antigens, including DR3. They developed signs of renal disease at the same time, although with different initial clinical manifestation and different responsiveness to steroid therapy. The relapse of proteinuria also occurred in a close time period. It may be that the same antigenic factors were involved in the immunological reactions leading to the development of membranous glomerular lesions in both children, since the 2 brothers had lived together all their life time.

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Fig. 1. a Light microscopy of a glomerulus from case 1 showing thickening of the capillary walls and spikes on the basement membranes (arrows). Silver stain, $\times 380$. b Immunofluorescence staining of a glomerulus from case 2 showing diffuse granular deposition of IgG along the capillary walls. $\times 340$. c Electron micrograph from case 2 showing subepithelial electron-dense deposits. $\times 10,200$.

Our paper confirms the relationship between DR3 antigen and IMN and gives additional information on familial occurrence of the disease.

2 Papiha, S.S.; Pareek, S.K.; Rodger, R.S.C.; Morley, A.R.; Wilkinson, R.; Roberts, D.F.; Kerr, N.S.: HLA-A, B, DR and Bf allotypes in patients with idiopathic membranous nephropathy (IMN). *Kidney int.* 31:130–134 (1987).

References

1 Sato, K.; Oguchi, H.; Hora, K.; Furukawa, T.; Furuta, S.; Shigematsu, H.; Yoshizawa, S.: Idiopathic membranous nephropathy in two brothers. *Nephron* 46:174–178 (1987).