Letter to the Editor

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Membranoproliferative Glomerulonephritis Associated with Insulin-Dependent Diabetes mellitus

A Case Report

Dear Sir,

The prevalence of nondiabetic renal disease in diabetic patients is not known. From a review of the relevant literature, most of which consists of isolated case reports, a wide spectrum of nondiabetic renal lesions can occur in patients with diabetes [1–4]. Although proteinuria is frequently the initial urinary abnormality observed in diabetic nephropathy, the nephrotic syndrome is rarely seen in diabetic children [1, 5, 6]. Here, we report the case of an adolescent with insulin-dependent diabetes mellitus (IDDM) who developed membranoproliferative glomerulonephritis (MPGN) 3 years after the diagnosis of diabetes. To the best of our knowledge, IDDM and MPGN have never been reported in children.

A 14-year-old girl with a 3-year history of IDDM was admitted to hospital because of edema. On admission, blood pressure was 120/80 mm Hg, pulse rate 82/min and pretibial edema was 3+. Fundoscopic examination revealed no microaneurysm or exudate. Laboratory studies showed a normal blood cell count with ESR 60 mm/h. Urinalysis revealed specific gravity 1,025, protein >300 mg/dl, glucose 100 mg/dl and 24-hour protein excretion was 145 mg/m^2/h. BUN, serum creatinine, total serum protein and serum albumin were 18 mg/dl, 0.6 mg/dl, 5.6 g/dl and 2.2 g/dl respectively. The blood glucose level was fairly well controlled by dieting and insulin therapy (blood glucose 256 mg/dl, HbA_1C 12.7). C_3 and C_4 were within normal limits. ANA, CRP, and rheumatoid factor were negative. HbsAg, anti-Hbs, anti-Hbc, anti-delta and anti-HCV were also negative; HAV-IgM was positive. A percutaneous renal biopsy was performed and demonstrated glomerular enlargement and lobulation, mesangial matrix increment and basal membrane thickening. Diffuse deposition of IgG and IgM on the glomerular mesangium were revealed immunohistochemically. Prednisolone 60 mg/m^2/day, cyclophosphamide 2 mg/kg/day and dipyridamole 8 mg/kg/day were begun and she continued to receive 45 U/day insulin.

The patient described in this report had IDDM, and a nephrotic syndrome manifested by generalized edema. Diabetic nephropathy is a well-recognized complication of diabetes mellitus but in our case the duration of diabetes mellitus was short and did not demonstrate hypertension, diabetic complications such as retinopathy and neuropathy or high levels of serum creatinine which are usually associated with diabetic nephropathy.

The incidence of nondiabetic glomerular disease has varied from 8% [1] to 22% [7] and most cases were membranous glomerulonephritis. In reviewing the medical literature, we could find only 9 other patients with IDDM and MPGN [5, 7, 8]. Chihara et al. [7] reported on 4 adult diabetic patients with MPGN, and suggested that the diabetics with MPGN particularly showed poorer prognosis than other diabetics. Kasinath et al. [8] reported 1 adult noninsulin-dependent diabetic patient with MPGN. Wass et al. [5] reported on 4 diabetic patients with MPGN. Our case is the youngest one with both IDDM and MPGN.

It has been reported that several types of glomerulonephritis are superimposed on diabetic patients [3, 4, 9, 10]. In some diabetic patients, proteinuria may reflect a concurrent renal lesion superimposed on diabetic nephropathy or unrelated disorder. The present case, as well as isolated cases reported in the literature, indicate that diabetic nephropathy is not always the sole cause of proteinuria in diabetic patients. The prevalence of nondiabetic renal disease in diabetic patients is not known. However, membranous nephropathy, acute postinfectious glomerulonephritis and steroid-responsive nephrotic syndrome were described more frequently [8]. Kasinath et al. [8] suggest that when proteinuria or any other abnormality in renal function appears in a diabetic patient, it deserves close scrutiny rather than being dismissed as diabetic nephropathy.

In this paper we have presented a young girl with MPGN superimposed on IDDM. We would like to emphasize that one should consider renal biopsy whenever there are findings which do not present the natural course of diabetic nephropathy.

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