

Case Report

Focal segmental glomerulosclerosis associated with Good's syndrome

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Introduction

The association between the presence of a thymoma and immunodeficiency was first recognized in 1954 by Dr Robert Good, who described a case of thymoma and hypogamma-globulinaemia in an adult [1]. The treatment of Good's syndrome includes the resection of the thymoma and immunoglobulin replacement to maintain adequate trough IgG values [2,3].

Thymoma can be associated with glomerulopathy [3]. However, a relation between glomerulopathy and Good's syndrome has not yet been reported in the literature. We report here a case of focal segmental glomerulosclerosis (FSGS) in a patient with Good's syndrome.

Case

A 50-year-old male patient suffered from diffuse generalized swelling. He had been thymectomised, followed by radiation and chemotherapy because of a mediastinal non-keratinized squamous cell tumour, and received immunoglobulin (Ig) replacement due to hypogamma-globulinaemia 2 years previously. Over the subsequent 2-year period, he had been frequently hospitalized because of severe recurrent respiratory tract infections and meningoencephalitis. On admission, he had had hypertension and anasarca for 3 months.

His baseline laboratory findings are shown in Table 1. Urinalysis revealed haematuria and pyuria besides massive proteinuria. Thyroid autoantibodies were found negative. Anti-nuclear antibody, HBsAg, anti-HBs, anti-HCV and anti-HIV testing were negative. Serum complement levels were normal. Serum IgG level was 558 mg/dl (range 844–1912), IgM level was 33.4 mg/dl (50–196) and IgA level was within normal limits [85 mg/dl (68–425)]. An analysis of lymphocyte subsets was as follows: cells with CD45

Table 1. Laboratory findings

	Baseline	After 3 months
Erythrocyte sedimentation rate (mm/h)	93	119
BUN (mg/dl)	14	32
Serum creatinine concentration (mg/dl)	1.2	1.9
Serum total cholesterol (mg/dl)	642	546
Serum albumin concentration (g/dl)	2.6	2.6
Serum free T4 level (pmol/L)	13.3	5.15
Serum TSH level (mIU/L)	29.7	408.9
Proteinuria (g/day)	5	9.5
Hemogram		
WBC (/mm ³)	6300	6400
Neutrophil (/mm ³)	4900	4800
Lymphocyte (/mm ³)	500	800
Hemoglobin (g/dl)	8.9	12.9
Hematocrit (%)	25.7	36.5
RBC (/mm ³)	3 620 000	3 430 000
PLT (/mm ³)	3 249 000	323 000

BUN: blood urea nitrogen, WBC: white blood cell, RBC: red blood cell, PLT: platelet count.

surface antigen 83% (*N*: 90–100), CD3 49% (*N*: 29–59), CD8 31% (*N*: 19–48), CD19 2% (*N*: 11–16) and NK 30% (*N*: 4–33.5). There was a lymphopenia with very low levels of B-cells (8/μl), decreased CD4 lymphocytes (80/μl) and normal levels CD8 lymphocytes (120/μl) with an inverted CD4/CD8 ratio.

X-ray, magnetic resonance imaging of the chest and abdominal ultrasonography were normal in terms of co-existence of a lymphoid malignancy, such as a lymphoma. Percutaneous renal biopsy revealed FSGS. The renal biopsy did not show any tubulo-interstitial Ig toxicity. The patient was treated with 1 mg/kg/day prednisolone and a combined therapy of angiotensin converting enzyme (ACE) inhibitor and angiotensin receptor blocker (ARB). In addition, he received intravenous immunoglobulin G for hypogamma-globulinaemia and L-thyroxin for hypothyroidism. After the initiation of corticosteroid treatment, the proteinuria regressed to 0.3 g/day and the patient was followed by a progressive tapering of the dose of corticosteroid.

On the third month of follow-up, the patient returned with widespread oedema. Blood pressure was 140/90 mmHg. His laboratory findings are shown in Table 1. Since he was immunodeficient, immunosuppressive treatment was not given. Antiproteinuric therapy with ACE inhibitor and

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ARB was continued. One month later, he was hospitalized because of sepsis and acute respiratory distress syndrome, and died in the intensive care unit.

Discussion

Good's syndrome should be suspected in patients over 40 years of age with antibody deficiency. A mediastinal mass, opportunistic infections and immunological disorders should be clinical clues to the presence of this disorder [2,3]. Almost all patients have reduced serum immunoglobulin levels [3]. In the present case, an anterior mediastinal mass and a reduction in serum immunoglobulin levels, a history of recurrent sino-pulmonary infections, opportunistic infections, CD4 T-cell lymphopenia and normal CD4/CD8 T-cell ratio were present.

The treatment of thymoma consists in the surgical removal of the tumour [3]. However, in patients with advanced disease, tumours often require radiotherapy and chemotherapy [2], such as in this case.

Karras *et al.* [4] reviewed 21 cases with thymoma-associated nephropathy. In half of these cases, nephropathy occurred several months or even years after the thymic disease had been diagnosed and treated. In the present case, nephropathy occurred 2 years after surgical thymectomy, radiotherapy and chemotherapy.

Karras *et al.* [4] reported that nephrotic syndrome was present in 16 patients. Total serum gammaglobulin levels were frequently low and they thought that hypogammaglobulinaemia was probably related to the nephrotic syndrome more than to 'Good's syndrome'. In our case, serum albumin and gammaglobulin levels were low. It has been shown that hypogamma-globulinaemia does not improve, even after thymectomy [2]. In the present case, the patient had hypogamma-globulinaemia since the beginning of the disease. However, heavy proteinuria could have contributed to the deterioration of the hypogamma-globulinaemia.

In primary FSGS, a circulating vascular permeability factor, produced by a T-cell population, is suspected to be responsible for the glomerular injury. Recent papers have shown some efficacy of a B-cell depleting agent (rituximab) in isolated cases of idiopathic nephrotic syndrome, suggesting a role for this lymphocyte subpopulation [5]. In our case, FSGS occurred despite an almost complete absence of circulating B-cells, suggesting that these cells are not necessarily involved in the pathogenesis of this nephropathy. Although earlier studies have suggested that thymectomy does not modify the incidence of nephropathy and immunological abnormalities, the link between thymoma and nephropathy has yet to be clarified [6].

In conclusion, we present a case of FSGS associated with Good's syndrome, which has not yet been reported. The importance of this case is the persistence of the immunological abnormality after treatment of thymoma and the contribution of FSGS with heavy proteinuria to the increased infections and mortality of our patient.

Conflict of interest statement. None declared.

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