C3 glomerulonephritis in post transplanted patient with MGRS (A case report)

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Abstract

Introduction and Aims C3 glomerulopathy includes several rare forms of glomerulonephritis with underlying defects in the alternative pathway of complement cascade.It is characterized by predominant C3 deposition in glomeruli due to abnormal activation of the alternative pathway of complement system. C3 GN has been reported to be associated with several systemic diseases. Methods We

will describe a case presenting C3 GN in a patient with monoclonal gammopathy of renal significance (MGRS) Results A 61 years old man patient presented with gross hematuria,anemia ,renal disfunction (creatinemia 2,4 mg/dl), proteinuria 814 mg/24 h.The patient was transplanted two years ago and he was taking corticosteroids ,MMF,tacrolimus and entecavir for hepatitis B .Serum protein electrophoresis ; hypogammaglobulinemia with a small homogeneous spike-like peak. Serum Kappa free light chains 32,4 mg/dl ,serum Lambda free light chains 9.3 mg/dl.Ratio 3,4 . Autoimmune tests ANA, ANCA, Anti ds DNA C3 and C4 were negative.Urine Kappa Light Chains 26,4 mg/24 h,urine Lambda Light Chains 6,6 mg/24h.Urine Kappa/Lambda ratio 4. After consultation with haematolgist results of bone narrow biopsy came for monoclonal gammopathy ,and FISH conclusion is presence of t(11,14)(q13,q32)which originated from IgH / CCND1 retraction and 1q21 acquisition.Renal biopsy is C3 glomerulopathy with mesengial and diffuse endocapillary proliferation under light microscope and diffuse deposition of C3 and no immunoglobulin under immunofluorescence microscope. Conclusions Monoclonal gammopathy of renal significance MGRS is a term to describe a group of haematological disorders associated with kidney disease that fail to meet the standard definitions for MM or lymphoma. In such cases, the renal impairment is often linked to the underlying haematological disorder. The intention was to make a clear distinction between MGUS , a benign asymptomatic condition, and MGRS, which may be associated with significant morbidity and mortality.

Background

C3 glomerulopathy includes several rare forms of glomerulonephritis with underlying defects in the alternative pathway of complement cascade.It is characterized by predominant C3 deposition in glomeruli due to abnormal activation of the alternative pathway of complement system. C3 GN has been reported to be associated with several systemic diseases

The recurrence of glomerulonephritis (GN) is critical to the prognosis of long-term renal transplant graft survival.

We will describe a case presenting C3 GN in a patient with monoclonal gammopathy of renal significance (MGRS)

Case presentation

A 61 years old man patient presented with gross hematuria,anemia ,renal disfunction (creatinemia 2,4 mg/dl), proteinuria 814 mg/24 h.The patient was

transplanted two years ago and he was taking corticosteroids ,MMF,tacrolimus and entecavir for hepatitis B .Serum protein electrophoresis ; hypogammaglobulinemia with a small homogeneous spike-like peak. Serum Kappa free light chains 32,4 mg/dl ,serum Lambda free light chains 9.3 mg/dl.Ratio 3,4 . Autoimmune tests ANA ,ANCA,Anti ds DNA C3 and C4 were negative.Urine Kappa Light Chains 26,4 mg/24 h,urine Lambda Light Chains 6,6 mg/24h.Urine Kappa/Lambda ratio 4. After consultation with haematolgist results of bone narrow biopsy came for monoclonal gammopathy ,and FISH conclusion is presence of t(11,14)(q13,q32) which originated from IgH / CCND1 retraction and 1q21 acquisition.Renal biopsy is C3 glomerulopathy with mesengial and diffuse endocapillary proliferation under light microscope and diffuse deposition of C3 and no immunoglobulin under immunofluorescence microscope.

FIGURE 1

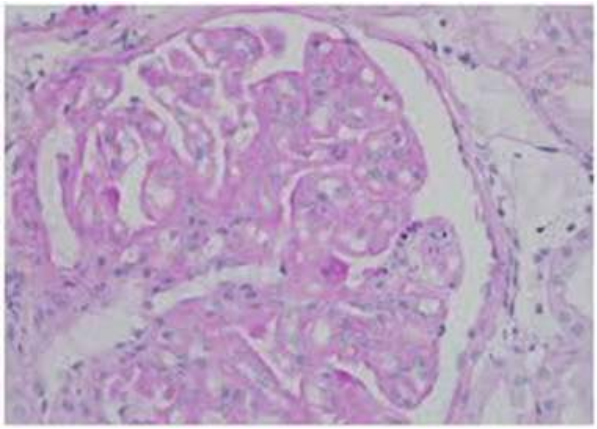
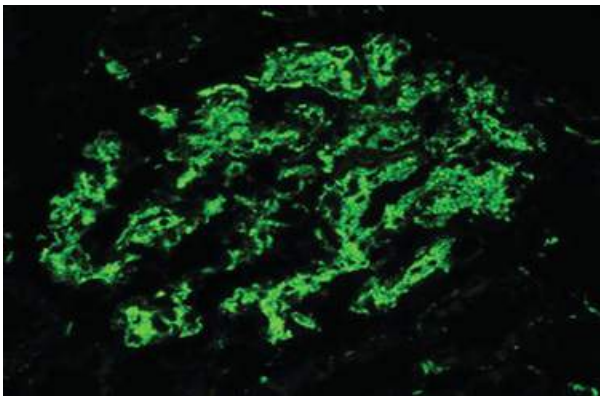


FIGURE 2



Pastmedical history

The patient was diagnosed with Membranous Glomerulonephritis associated with Hepatitis B virus infection in 2012. He has done in this time and Bone Marrow Biopsy, Serum and Urine Protein Electrophoresis, Imunoelectrophoresis ect - negative for MGUS.

In 2015 for the first time in Serum Protein Electrophoresis was detected a small spike, with hypogammaglobulinemia. in October 2017, underwent Renal Transplantation. Serum creatinin level after Renal Transplantation 1.6-1.9mg/dl, hemoglobin level 10.4-12 gr/dl,

Surgical History

October 2017 – Allogeneic kidney transplant.

Family History

No FH of cancer.

Social History

No smoking

No alkohol

Diagnosis:

MGUS IgG Kappa or Monoclonal Gammopathy of Renal Significance (C3glomerulopathy)

The patient is recommended the treatment according to the scheme VCD (CyBorD), 21 day cycle, maximum of 4 cycles and Autologous Hematopoietic Stem Cell Transplantation.

Conclusions

Monoclonal gammopathy of renal significance MGRS is a term to describe a group of haematological disorders associated with kidney disease that fail to meet the standard definitions for MM or lymphoma. In such cases, the renal impairment is often linked to the underlying haematological disorder. The intention was to make a clear distinction between MGUS , a benign asymptomatic condition, and MGRS, which may be associated with significant morbidity and mortality

The incidence of monoclonal gammopathy of undetermined significance (MGUS) increases with age, from 1% of people aged 25 years to > 5% of people > 70 years.

Diagnosis of MGUS is usually suspected when M-protein is incidentally detected in blood or urine during a routine examination. On laboratory evaluation, M-protein is present in low levels in serum (< 3 g/dL) or urine (< 200 mg/24 hours). MGUS is differentiated from malignant plasma cell disorders because M-protein levels are lower and lytic bone lesions, anemia, and renal dysfunction are absent. No antineoplastic treatment is recommended. However, recent studies suggest that MGUS patients with associated bone loss (osteopenia or osteoporosis) may benefit from treatment with intravenous bisphosphonates. Monoclonal gammopathy of renal significance (MGRS) represents a group of disorders in which a monoclonal immunoglobulin secreted by a nonmalignant or premalignant B cell or plasma cell clone causes renal damage. MGRS-associated kidney diseases encompass a wide spectrum of renal pathology and include such lesions as immunoglobulin-associated amyloidosis, the monoclonal immunoglobulin deposition diseases (MIDDs; light chain deposition disease, heavy chain deposition disease, and light and heavy chain deposition disease), proliferative glomerulonephritis with monoclonal immunoglobulin deposits (PGNMID), C3 glomerulopathy with monoclonal gammopathy, light chain proximal tubulopathy (Fanconi syndrome), and several others. Kidney disease associated with MGRSs is highly heterogeneous, which means that the renal biopsy is considered a key diagnostic test. However, the concomitant presence of kidney disease of another etiology may make the correct histological interpretation difficult in some cases and be a confounding factor.

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