Case Report

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Immunoglobulin A nephropathy in remission: a case report

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Introduction: Immunoglobulin A nephropathy is the most prevalent form of primary glomerulonephritis.
Case presentation: A 33-year-old military male presented with complaints of fever, headache, myalgia, chills, and haematuria for 10 years. His lab results showed elevated serum creatinine levels and proteinuria. A renal biopsy was done which was consistent with a diagnosis of immunoglobulin A nephropathy. He was managed with antihypertensive, including angiotensin-converting enzyme inhibitors, steroids and immunosuppressants, and Omega-3 fatty acids. There was remission of the symptoms and the patient's serum creatinine and sonogram findings returned to baseline.
Conclusion: Routine follow-up along with the appropriate use of medications can limit disease complications and progression.

Keywords: antihypertensive, case report, glomerulonephritis, nephropathy, steroids

Introduction

The most prevalent form of primary glomerulonephritis, known as Immunoglobulin A nephropathy (IgAN), is pathologically identified by the deposition of immune complexes including IgA, usually in addition to IgG and IgM, and complement C3 in the glomerular mesangial area of the kidney[1]. IgAN is more frequent in younger Caucasian or East Asian males. Hypertension, chronic proteinuria, and impaired kidney function are risk factors for IgAN[2]. Various environmental and genetic factors contribute to the development of IgAN. In the majority of instances, this condition is idiopathic, although it may also be linked to other disorders, such as Crohn's disease[3]. Individuals with IgAN frequently present with asymptomatic microscopic haematuria or proteinuria. However, some individuals with IgAN have episodic gross haematuria following infection, particularly after upper respiratory infections[4]. IgA patients are approximately a third more prone to end-stage renal disease (ESRD)[2]. Angiotensin-converting converting enzyme inhibitors (ACEIs) and/or steroids for persistent proteinuria are administered to treat IgAN[5]. This study is reported in line with SCARE criteria[6].

HIGHLIGHTS

- Immunoglobulin A nephropathy is the most prevalent form of primary glomerulonephritis.
- Some patients have a likelihood of progression to end-stage renal disease while some undergo spontaneous remission.
- Routine follow-up along with the appropriate use of medications can limit disease complications and progression.

Herein we report a case of a 33-year-old military male who was diagnosed with IgA nephropathy. He was managed conservatively with anti-hypertensives, steroids, and immunosuppressants. Currently, the patient's symptoms are under control and under regular follow-up.

Case presentation

A 33-year-old military male presented to our clinic with complaints of fever, headache, myalgia, chills, and haematuria since 10 years ago. Those symptoms aggravated after exertional training. He had no significant past medical history and was not taking any medications. A provisional diagnosis of exercise-induced haematuria was made. He underwent a thorough physical examination, and his blood pressure was found to be 160/100 mmHg. Laboratory investigations revealed elevated serum creatinine (1.5 mg/dl) and proteinuria (1 +). Renal ultrasound showed normal-sized kidneys with no evidence of obstruction or masses.

A renal biopsy was performed, which revealed mesangial proliferation and the deposition of IgA in the glomeruli, consistent with a diagnosis of IgA nephropathy. The patient was started on antihypertensive medication, including ACEIs and statins. He was also advised to follow a low-salt diet and avoid smoking and alcohol. Omega-3 fatty acids were also prescribed to reduce inflammation.

Over the next few years, the patient had a few episodes of deranged renal function tests (RFTs), and corticomedullary changes in renal ultrasound (Figure. 1 and Figure. 2) with

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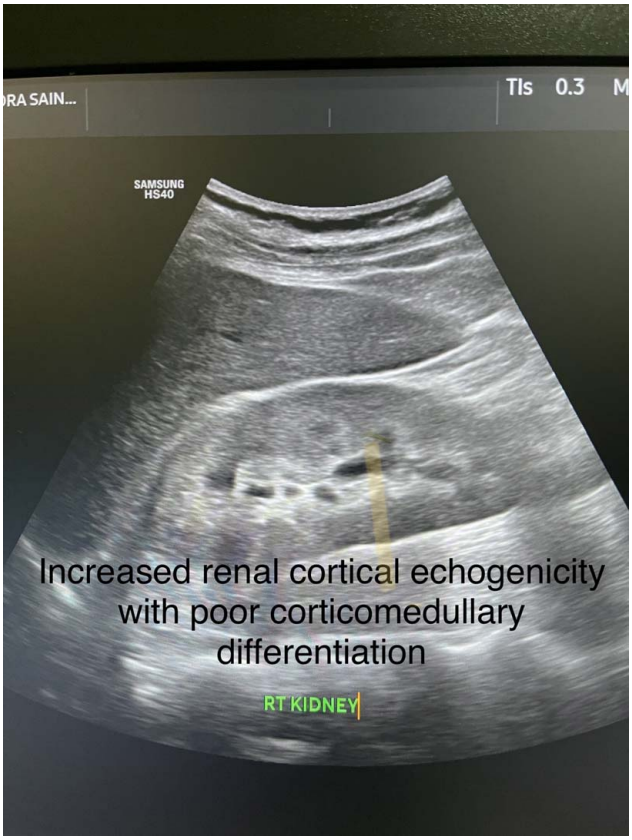

Figure 1. Increased renal cortical echogenicity with poor corticomedullary differentiation of right kidney.

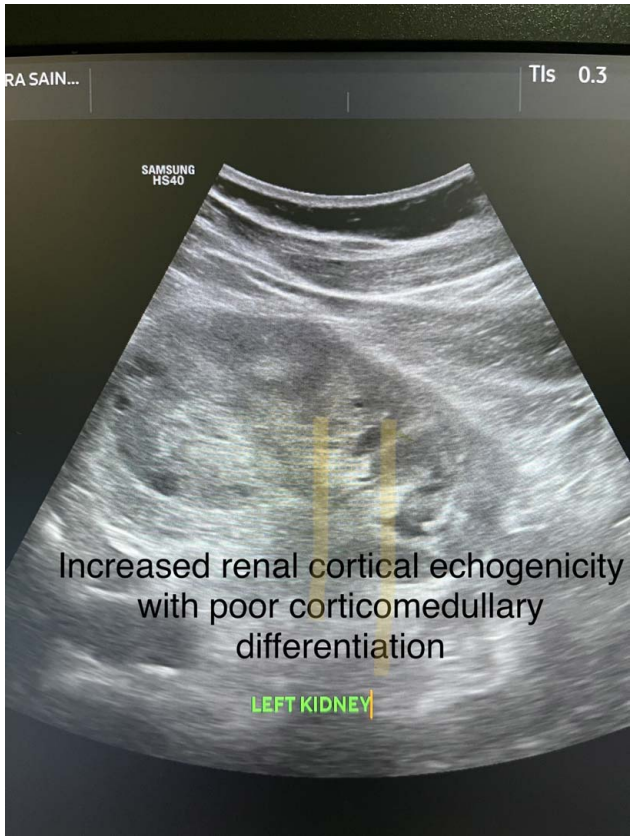

Figure 2. Increased renal cortical echogenicity with poor corticomedullary differentiation of left kidney.

elevated serum creatinine levels and proteinuria. His follow-up biopsy shows consistent findings. He was managed conservatively with a course of steroids and immunosuppressants. However, the episodes were self-limiting, and the patient's RFTs and sonogram findings returned to baseline.

Currently, the patient's symptoms and lab parameters are under control. His blood pressure is well-controlled with medication, and his serum creatinine levels and proteinuria have normalized. He is on regular follow-up, with regular monitoring of RFTs, blood pressure, and urine analysis. His medication regimen has remained unchanged for the past year.

Discussion

With a global prevalence of at least 2.5 per 100 000, IgAN is the most common primary glomerulonephritis globally[7].

It is unclear exactly how the disease process pathophysiology works. The disease and the ensuing kidney damage have been attributed to a four-hit hypothesis. The synthesis of an IgA1 subtype immunoglobulin that has been improperly galactosylated is the initial stage. The development of an IgG or IgA autoantibody to the galactose-deficient IgA1 immunoglobulin is the second phase. A circulating immunological complex is created when the autoantibody attaches to galactose-deficient IgA1. The mesangial cells of the glomerulus are then activated by this circulating complex, which leads to complement activation, an expansion of the immunological response, and kidney damage[8].

Nephrotic syndrome, nephritic syndrome, asymptomatic microscopic or macroscopic haematuria, and occasionally rapidly progressive glomerulonephritis are among the symptoms that might be present. Macroscopic haematuria episodes in children are more prevalent than in adults, and they are frequently accompanied by bouts of upper respiratory tract infections[9]. ESRD is the end-stage of the illness, and the likelihood of progression has fluctuated from as low as 5–15% of patients 5 years after diagnosis to as high as 10–50% of patients 20 years after diagnosis. Some people do not advance to ESRD, and some have even been documented to have spontaneous remission[10]. As in our case, in which the symptoms are self-limiting and have not progressed to ESRD.

Mesangial hypercellularity and expansion are the light microscopic hallmarks of IgAN[11]. Bright dominant or co-dominant IgA staining with the mesangium is visible using immunofluorescence. Immunoglobulins IgG and IgM can also stain positively in glomeruli, but often with lesser intensity than IgA[12]. The presence of immune complex deposits in the mesangial and para mesangial regions is the primary characteristic revealed by electron microscopy[13].

Since relatively few glomerular diseases exhibit dominant or co-dominant mesangial IgA deposits, the diagnosis of IgAN is often straightforward. IgAN and IgA vasculitis cannot be distinguished by kidney biopsy alone. Immunofluorescence typically reveals IgA deposits in lupus nephritis, and class II lupus nephritis also exhibits mesangial hypercellularity. To differentiate between

the two clinical information combined with serologic testing is typically adequate[13]. HIV is a recognized cause of secondary IgAN, and HIV-associated glomerulonephritis can have high IgA glomerular staining. In this instance, serological testing also aids in the distinction between the two[14].

There is currently no cure for IgAN. The cornerstone of treatment entails sustaining adequate blood pressure management with an ACEI or an angiotensin receptor blocker drug and fish oil[15]. It has been demonstrated that corticosteroid medication is effective in maintaining renal function and lowering proteinuria[16]. Likewise, our patient is under ACEIs, steroids, and Omega-3 fatty acids.

As in this case, the patient has not advanced to ESRD even after a 10-year time frame. The significance of routine follow-up and medication adherence cannot be overstated in light of this case report. Therefore, regular observation and appointments with the specialist might slow the disease's course as well as its complications.

Conclusion

IgAN is the most common primary glomerulonephritis globally. Some patients have a likelihood of progression to ESRD while some undergo spontaneous remission. Routine follow-up along with the appropriate use of medications can limit disease complications and progression.

Ethical approval

Not required.

Consent for publication

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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None.

Authors contribution

All the authors contributed equally to writing and preparing the manuscript. The final version of the article is approved by all authors.

Conflicts of interest disclosure

The authors declare no conflict of interest.

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Guarantor

Asim Mahat.

Availability of data

All data about the case are available as a part of the article and no additional source data are required.

Peer review

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