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Case Report Open Access

17 Years Old Patient with Nephritic Syndrome Induced by Systemic Lupus Erythematosus

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Abstract

The case study describes the admission of a 17 years old patient in the emergency department of Constanta with main complaints: diffuse abdominal pain, polyarthralgia and intense headache. The first screening tests revealed anaemia, renal impairment associated with nephritic syndrome. In the immunological investigations, the level of antibodies anti-ds DNA was increased and the following renal biopsy presented segmental changes of the glomerular membranes. The clinical features associated with the laboratory results were specific for the diagnosis of systemic lupus erythematosus. The patient was continuously under follow-up and was given mainly antihypertensive drugs and corticosteroids, followed by i.v. cyclophosphamide. She also received treatment for correction of anaemia and analgesia. In conclusion, this patient with a newly diagnosed autoimmune disorder was presented with deteriorating renal function associated with hypertension, conditions which appear very rarely in patients of such a young age.

Keywords: Nephritis; Lupus; Glomerulonephritis; Antibodies; Immunology; Corticosteroids; Nephritic syndrome

Introduction

Systemic lupus erythematosus is presented as a chronic inflammatory disease which may lead to complications of renal, respiratory and cardiovascular system. It affects mostly women in about 90% between the ages 15-44 and only 15% before age 15. Some of the causes of lupus refer mainly to genetic and hereditary factors, drugs and ultraviolet light [1].

Regarding the pathogenesis of the disease, the immune system's failure leads to the development of autoantibodies that form circulating complexes, activation of complement and influx of neutrophils causing inflammation of the tissues. This immunological mechanism is responsible for many complications such as glomerulonephritis. At the time of the diagnosis of lupus, almost 1/3 of the patients develop renal dysfunction presented as lupus nephritis [2].

In our case, the 17 years old girl did not know about the presence of the autoimmune disorder and came in the hospital with other symptoms not characteristic for her disease.

Case Presentation

The young girl, accusing in the last 10 months repeated episodes of urinary tract infections, associated with slight palpebral edema and polyarthralgia, came on the admission with hypertension of degree 140/90 mmHg. Physical examination revealed paleness of the skin and sclera and 2+ pitting edema.

On the auscultation, normal and rhythmical heart sounds S1, S2 and breathing sounds, on bilateral examination, were revealed completely normal. On the laboratory investigation, there was decreased level of hematocrit and level of hemoglobin around 6.7 g/dl. Normal level of white blood cells. On the biochemical exam, pathological findings of serum creatinine of 1.79 mg/dl and serum urea of 85 mg/dl. Normal LFTs. Furthermore, decreased serum C3 complement level value of 58 mg/dl and almost normal level of C4 complement in association with hypoalbuminemia. After the blood tests, urine sample examination was performed. Urine pH of 6 with proteinuria of range 1-3 g/24h of nephritic type associated with active urinary sediment of dysmorphic red blood cells, casts and cylinders. Imagistic control was performed. The ultrasound and the abdominal CT revealed enlarged kidneys without further surrounding effusion. The cortical region appeared normal. No stones detected.

The clinical image of the young patient in association with the nephritic syndrome, the kidney deterioration and the imagistic control requested a further immunological control in order to find out if there is any autoimmune disorder. The results revealed an increased level of immunoglobulins IgG (1001 mg/dl), positive antibodies anti-double stranded DNA (anti-ds DNA) of 579.2 and elevated titer of ANA antibodies.

Based on the clinical image of the patient and the serology exams, the diagnosis was orientated towards an autoimmune disorder, systemic lupus erythematosus. In order to confirm the diagnosis, after starting the first basic treatment, a renal biopsy was performed showing focal segmental endo capillary proliferation on the glomeruli level and cellular immune deposits on the mesangial space [3-5].

Discussion

The autoimmune diseases may lead to a different group of complications. As far as we don't know the exact cause which is responsible, the patients cannot be treated efficiently. The immune system reacts against the body tissues by composing auto antibodies. Systemic lupus is a disease of the connective tissue which can have a different onset each time. In this case, it presented with acute glomerulonephritis. It attacks the skin, the joints and after multi organ involvement [6].

Mainly it is characterized by rashes of butterfly shape and joint pain usually symmetrically. Our patient didn't have the characteristic malar pattern of rash which across the bridge of the nose. In our case, the autoimmune disease has manifested with acute renal deterioration impaired level of serum creatinine and urea, urine active sediment with hematuria and proteinuria. The blood tests confirmed the presence of a systemic autoimmune disease, antibodies positive for lupus and the biopsy confirmed the glomerular lesion and its extension [7].

Glomerulonephritis is considered to be an immunologically mediated disorder with involvement of cellular immunity (T lymphocytes, macrophages), immune complexes formation and other inflammatory mediators. From histological point of view, the glomerular membrane is diffusely altered, flattened as a reaction to the formation of immunological complexes in the glomerular tissue. Biopsy is needed to certified the diagnosis of lupus nephritis [8].

The treatment plan has as goal to relieve the symptoms and succeed complete remission of the disease. It was given monthly i.v. cyclophosphamide, for 6 months, with complete remission of proteinuria and normalization of renal function; maintenance therapy was continued with oral prednisone and mycophenolate mofetil (MMF). Antihypertensive therapy of ACE inhibitors class (Ramipril) for hypertension and albuminuria. Also, we administered doses of loop diuretics (Furosemide) to decrease the edema. The anaemia and the Hemoglobin level was corrected with blood transfusion [9].

Conclusion

This report was conducted to describe the manifestations of a sub-diagnosed disease to a young patient and to inform clinical doctors, emergency doctors and nephrologists to consider always the case of an immunological disorder such as lupus erythematosus, especially in such a special case, with incomplete ACR (American College of Rheumatology) criteria.

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