OPEN ACCESS

Saudi Journal of Medicine

Abbreviated Key Title: Saudi J Med
ISSN 2518-3389 (Print) |ISSN 2518-3397 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Case Report

Renal Involvement in Rhupus Syndrome: A Case Report

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DOI: 10.36348/sjm.2021.v06i03.001 | **Received:** 22.02.2021 | **Accepted:** 03.03.2021 | **Published:** 15.03.2021

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Abstract

Rheumatoid arthritis is chronic rheumatism characterized by symmetric, inflammatory, peripheral polyarthritis with a highly destructive potential. Systemic lupus erythematosus is a multi-system autoimmune disease that combines visceral involvement with very frequent and disabling joint damage. These two pathologies share many clinical manifestations and may coexist in a patient. Such condition defines the Rhupus syndrome, which is a rare overlapping syndrome. The exact etiopathogenesis remains unknown. Serious visceral damages, particularly renal, are exceptionally reported during Rhupus syndrome. We report the case of a male patient diagnosed with Rhupus syndrome who presented with glomerulonephritis.

Keywords: Rhupus, etiopathogenesis.

INTRODUCTION

The coexistence of two or more connective tissue diseases in the same patient is a rare phenomenon, particularly the combination of rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). This association was first described by Toone in 1960, however it was Shur in 1971 who first used the term "Rhupus" to refer to it [1, 2].

Rhupus syndrome is a rare clinical entity [3, 4]. Its prevalence is around 0.09% [3], with few isolated case reports. Renal involvement during this syndrome is rarely described in the literature (Table 1). We report the case of a glomerulonephritis complicating Rhupus syndrome in a 35-year-old man.

CASE PRESENTATION

A 35-year-old man, diagnosed with seropositive RA on the basis of symmetrical polyarthritis involving the large and small joints, sparing the distal interphalangeal joints. Physical examination showed typical RA osteoarticular deformities including ulnar drift, swan-neck and Z-shaped deformities. Standard radiography showed erosive lesions with left wrist carpitis. He tested positive for rheumatoid factor (Waler-rose at 65 IU/ml, and latex at 80 IU / ml) and for anti-cyclic citrullinated peptide antibodies (99 IU/ml). He was treated with corticosteroids (prednisone 10 mg daily) and methotrexate (15 mg weekly).

Two years after the initial RA diagnosis, the patient presented with a NYHA Class III dyspnea associated with asthenia and photosensitivity. Physicalfindings were consistent with pleural effusion. His laboratory results revealed lymphopenia of 250 / mm^3 with regenerative normochromic normocytic anemia at 8g/dl and a positive coombs test. Serum anti-nuclear antibodies were positive with a titer of 1/640 with a homogeneous pattern. He also tested positive for anti-dsDNA (39 IU/ml) and anti-Sm antibodies.

Kidney function was abnormal with a serum creatinine of 14, 8mg/l,urea of 0, 9 g/l,and the estimated glomerular filtration rate was at 57, 3 ml/min /1.73m^2. The urine sediment examination revealed hematuria without leukocyturia. The proteinuria was positive at 2.54 g /24 h. Cardiac ultrasound and chest X-ray showed moderate pleuropericarditis.

The diagnosis of rhupussyndrome was established of the basis of SLE and RA criteria. A kidney biopsy was performed, revealing class IV lupus nephritis with deposits of IgA, IgM, IgG, C3 and C1q.

He received three consecutive pulses of methylprednisolone 1000 mg IV daily, followed by oral prednisone (1 mg/kg/day), IV cyclophosphamide

monthly for 6 months and every 3 months for 2 years, then azathioprine at 150 mg/day.

The patient achieved renal and articular remission with proteinuria of 0.2g /24 h. No recurrence was observed during a 4-year follow-up.

DISCUSSION

Rhupus syndrome is a rare entity with an estimated prevalence of 0,09%(5). It is an overlap syndrome with no consensus over definition, diagnosis and treatment [6].

RA and SLE have long been considered as two mutually-exclusive systemic autoimmune diseases with radically different epidemiological, pathophysiological, clinical and biological profiles and treatments, as RA involves a Th1 response, while there is shift toward a Th2 response in patients with SLE, with two different genetic backgrounds [7].

In 1971, Peter Shur introduced the concept of Rhupus , he coined the term "rhupus" to describe patients who satisfy the criteria for both SLE and RA [1]. Panush and colleagues accurately described six patients with RA and SLE simultaneously in 1988. They concluded that Rhupus was linked to an erosive arthritis in lupus patients [3].

Although anti-cyclic citrullinated peptide antibodies and rheumatoid factor may exceptionally be present in lupus, their high levels (greater than 3 times the upper limit of normal) and the presence of early radiologic signs are clear evidence of an authentic RA, and predictive marker of worse functional prognosis. On the other hand, the simultaneous positivity of native anti-dsDNA and anti-Sm antibodies supports the diagnosis of an overlapping lupus, thus constituting rhupus syndrome.

The initial clinical symptoms most often correspond to those of RA, followed by those of SLE. In order of frequency, the clinical manifestations of lupus are cutaneous, hematological and serosal, with a mean onset time of 11 years [7, 8].

Few authors have encountered renal involvement in cases of Rhupus syndrome presenting with lupus nephritis (Table 1). In a retrospective study including 7 cases with rhupus syndrome, Pichilingue et al., reported aclass IV glomerulonephritis in 5 patients, with aproteinuria varying between 288 et 2560 mg/day. it seems then that renal involvementduringrhupus syndrome is severe, as it was also the case of our patient [9].

To date, there is no consensus on recommendations for the management of rhupus syndrome. Corticosteroid therapy combined with methotrexate or synthetic antimalarial drugs have shown their effectiveness [6, 10]. R. Seohad used Cyclosporine with good results after six months [11].

CONCLUSION

Rhupus syndrome is a rare condition characterized by the presence of erosive arthritis together with signs of SLE.Renal involvement complicates its prognosis; it is rare with very limited reported cases.

Table-1: Published cases of renal involvement in rhupus syndrome

Author	Patients number	Renal involvement
Li J *et al.*[12)	56	22 patients
Liu *et al.* [13]	51	29 patients
Frade-Sosa et al. [14]	40	4 patients
Simon *et al.* [15]	22	5 patients
Cohen *et al.* [8]	11	8 patients
Brand *et al.* [16]	11	7 patients
Tani *et al.* [17]	10	2 patients
Fernandez *et al.* [18]	8	3 patients
Martinez *et al.* [19]	8	3 patients
Pichilingue *et al.* [9]	7	5 patients (type IV glomerulonephritis)
Panush *et al.* [3]	6	1 patient
Benavente *et al.* [20]	4	1 patient
Roy *et al.* [21]	1	Class IV lupus nephritis
Zhao XJ *et al.* [22]	1	Lupus nephritis
Santos *et al.* [23]	1	Class V lupus nephritis

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