Case Report

Rhupus syndrome with hypothyroidism - A case report

Sathish Chander G[1*], E.A. Ashok Kumar[2]

[1]PG Student, [2]Professor
Department of Medicine, MNR Medical College and Hospital, Sangareddy, Telangana, India
[*]Corresponding author email: **drsathish2404@gmail.com**

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Abstract

A 36 years old female presented with symmetrical polyarthritis diagnosed as Rheumatoid Arthritis (RA). After six months, she developed tender thyroid swelling diagnosed as autoimmune thyroiditis with hypothyroidism. Another six months later, she developed butterfly rash over the face with exacerbation of polyarthritis and a diagnosis of Systemic Lupus Erythematosus (SLE) with anti- ds-DNA positive was made. She was diagnosed with rheumatoid arthritis overlapping with systemic lupus erythematosus (Rhupus syndrome) with hypothyroidism.

Key words

Rhupus syndrome, Systemic Lupus Erythematosus (SLE), Rheumatoid arthritis, Hypothyroidism.

Introduction

Rhupus syndrome is a rare clinical condition in which both Rheumatoid Arthritis and SLE features are overlapped and which is supported by the presence of auto antibodies seen in both SLE and Rheumatoid Arthritis. The coexistence of two or more connective tissue diseases in the same patient is a rare phenomenon, particularly for the coexistence of SLE and RA, which has been estimated between 0.01% and 2% [1-4]. Less than one percent of patients with SLE develop erosive disease which is indistinguishable from rheumatoid arthritis (RA), an entity known as Rhupus Syndrome [1]. Appreciation of these patients with Rhupus is important since their therapy and outcome differ from those having RA or SLE alone. The development of two or more autoimmune rheumatic diseases in one patient and the interplay of genetic and environmental factors leading to the presence of several autoimmune disease and/or their auto-antibodies in families, is being termed "shared autoimmunity" [5]. SLE and RA are associated with anti-thyroid

antibodies, TPOAb> TgAb in SLE and TgAb> TPOAb in RA [6].

Case report

A 36 years old female, presented with symmetrical polyarthritis involving small and large joints of 2 months duration. On examination, tender and swollen joints with restricted movements were present at bilateral wrists, bilateral proximal inter phalangeal and metacarpo phalangeal joints, bilateral elbows, left shoulder, bilateral ankles, bilateral temporo-mandibular joints. Terminal inter phalangeal joints were normal. There were no skin rashes. Examination of cardiovascular system, respiratory system and central nervous system was normal.

On Investigation, complete urine examination revealed trace albumin but sugar was negative. Complete blood picture showed hemoglobin 10.1 gm%, MCV - 30, MCHC - 26, White Blood Cell (WBC) picture showed total leukocyte count (TLC) - 4500, Neutrophils - 70%, Lymphocytes - 28%, Eosinophils - 2%, Basophils - 0%, Monocytes - 0%, Platelets - 1.5 lakh/cmm. ESR was 50 mm in 1st hour. X-ray chest PA view was normal. X-ray of both hands revealed juxta articular osteopenia. Rheumatoid factor (Ig-M) level was 53 IU/ml. She was diagnosed as sero-positive rheumatoid arthritis and was kept on oral Prednisolone 2 mg/kg, Methotrexate15 mg once weekly and Naproxen 500 mg/day.

After 6 months, she developed tender diffuse thyroid swelling, without any bruit over the swelling. Ultrasound of thyroid revealed diffuse uniform thyroid swelling measuring 25.6 ml. T3 was 0.6 nmol/L, T4 was 12 mcg/dl, TSH was 100 micro IU/ml, anti TPO Ab was 120 IU/ml and Tg Ab was 50 IU/ml. Patient was diagnosed as thyroiditis with hypothyroidism and was kept on Tab. Levothyroxin 100 mcg/day.

She was asymptomatic for 6 months after that she developed malar rash, periorbital swelling, generalized maculo-papular rash with 10 kg weight loss and exacerbation of symmetrical polyarthritis. On examination, there was butterfly shaped malar rash present. On investigation, ANA-positive and Anti ds-DNA was 350 IU/ml, HIV-non reactive, HBs Ag-negative, Anti HCV-negative. Ultrasound abdomen showed right kidney size was 10X4.7 cm and left kidney size was 8.8X4.09 cm. Based on clinical, laboratory and radiological findings, she was diagnosed with Rheumatoid Arthritis overlapping with Systemic Lupus Erythematosus (Rhupus syndrome) with hypothyroidism. She was treated with Tab. Prednisolone 2 mg/kg/day, Tab. Hydroxy chloroquine 400 mg/day, Tab. Azathioprine 100 mg/day, Tab. Levothyroxine 100 mcg/day and Tab. Naproxen 500 mg/day. There was marked reduction in arthritis and facial malar rash.

Discussion

The coexistence of two or more connective tissue diseases in the same patient is a rare phenomenon, particularly for the coexistence of SLE and RA is known as Rhupus Syndrome. it as an erosive symmetric polyarthritis, accompanied by signs and symptoms of SLE and the presence of high specificity auto-antibodies, anti-dsDNA or anti-SM antibodies [2, 3]. These patients present with RA characteristics, developing SLE characteristics afterwards, few present it simultaneously and even less when SLE is the initial diagnosis [2, 3]. Development of two or more autoimmune rheumatic diseases in one patient and the interplay of genetic and environmental factors leading to the presence of several autoimmune disease and/or their auto-antibodies in families, is being termed "shared autoimmunity".

In one study [7], thyroid disorders were significantly increased in SLE patients (50%) when compared to RA (15%) ($P < 0.05$). In SLE group, 20% had euthyroid sick syndrome, 20% had hypothyroidism (10% subclinical and 10% biochemical), and 10% had hyperthyroidism (5% subclinical and 5% biochemical). However, in RA, 10% had hypothyroidism (subclinical) and

5% had subclinical hyperthyroidism. TPOAb was found in 15% of SLE and 5% of RA patients and 10% of controls, but the titres were higher in SLE and RA patients. Also, TgAb was found in 5% of SLE, 30% of RA patients and 10% of controls, but the titres were higher in SLE and RA patients. It is concluded that thyroid abnormalities are more implicated with euthyroid sick syndrome and hypothyroidism (subclinical and overt) than hyperthyroidism in SLE patients.

The incidence of thyroid dysfunction in rheumatoid is less (5.1%) than SLE (13.1%). The majority had clinical hypothyroidism (73.2%), followed by subclinical hypothyroidism (17.1%) and hyperthyroidism (7.3%). The auto-antibodies were also less in RA than in SLE [8].

Thyroid dysfunction was more frequent in SLE (13.1%) than in RA (5.1%). Hyperthyroidism was less common, seen in the younger age group, to be followed by Subclinical hypothyroidism in the older age group and clinical hypothyroid, the commonest dysfunction in the oldest age group. Anti-thyroid antibodies were more frequent in SLE than in RA [8].

In our patient who presented with Rhupus syndrome with hypothyroidism is a rare entity in this part of the country.

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