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Case Report

Hypothyroidism as an unusual emerging initial clinical manifestation in systemic lupus erythematosus

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ABSTRACT

Systemic lupus erythematosus (SLE) is a multisystem autoimmune inflammatory disorder which may be associated with other auto immune disorders. studies found that thyroid abnormalities were common in SLE patients. Here we are reporting a case of an adolescent girl initially presented with features of hypothyroidism who was later presented with anorexia, joints pain, pain abdomen with malar rash and discoid rash and diagnosed as systemic lupus erythematosus. emphasizing the importance of recognizing overlapping autoimmune disorders in pediatric patients, and the importance of thyroid disease should be acknowledged in the treatment of SLE.

Keywords: Hypothyroidism, Systemic lupus erythematosus, Autoimmune disease

INTRODUCTION

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by multisystem inflammation and presence of circulating autoantibodies directed against self-antigen.[1] It is more common in females with a female-to-male ratio of 8:1 in adults and 4:1 in pediatrics.[2] SLE can be associated with other autoimmune diseases, such as autoimmune hypothyroidism.[3] Thyroid diseases have been more frequently reported in patients with SLE than in the general population, particularly in cases with higher incidence of antithyroid antibodies.[4] However, studies describing the emergence of SLE in previously diagnosed auto-immune thyroiditis patients are scarce. It is reported that anti-TPO antibody may be present in 85-100% cases of SLE with thyroid disorder.[5] This case report describes an adolescent girl who developed SLE one year after being initially diagnosed as hypothyroidism.

CASE REPORT

A 14-year-old adolescent girl presented with complaints of loss of appetite, weight loss, pain in both large and small joints, abdominal pain, exertional dyspnea and rashes over cheeks and palms for the last 2 months. On examination she was cachexic with temperature 37.8 C, pulse 84 bpm, blood pressure 100/70 mmHg, respiratory rate 18 cpm, non-scarring diffuse alopecia, malar rash (butterfly) present over cheeks crosses the nasal bridge. Discoid rashes over forehead, palms and behind the ear present. Punctate erythema of fingers (vasculitis lesions) present and clinically pale. No lymphadenopathy. Examination of the extremities reveal tender joints with no swelling. Air entry equal and there were no cardiac murmurs. abdomen is soft, non-tender and no organomegaly.

One year back she developed facial puffiness and swelling over neck which persisted for 2 months. accompanied with symptoms of lethargy, cold intolerance, irregular menstrual cycles on evaluation she was diagnosed as hypothyroidism secondary to thyroiditis. treated with oral thyroid hormone replacement therapy with tab levothyroxine 75 mcg/day. Since then, she was on regular medications.

Laboratory findings-hemoglobin of 7 g/dl, MCV-83 fL, PCV-18%, platelets-3.27 lakh/cumm peripheral smear microcytic hypochromic anemia. retic count-1.2%, total leukocyte counts-electrolytes and liver function tests

normal. Direct Coomb's test-positive. Erythrocyte sedimentation rate (ESR) -80 mm/hour, C-reactive protein (CRP) positive urine routine-proteinuria 2+ without RBC'S and casts. HIV and HBS Ag negative. Tubercular work up negative. Anti-TPO antibody positive. TSH-30 Miu/l, T3-3.7 ng/ml, T4-1.73 mcg/dl. Rheumatology works up revealed, ANA positive (1:320), dsDNA antibody positive, C3 levels decreased.C4 levels normal. A plain radiograph of the chest showed cardiomegaly and electrocardiography (ECG) -low voltage QRS complexes suggestive of pericarditis. 2D-ECHO-mild pericardial effusion present. Contrast enhanced computed tomography (CECT) abdomen revealed few enlarged sub aortic group of lymph nodes. Ultrasonography (USG) neck suggestive of thyroiditis.

An assessment of juvenile systemic lupus erythematosus (EULAR/ACR 2019 classification criteria) with Hashimoto's thyroiditis was made. she was started with oral corticosteroids with dose of 1 mg/kg/day gradually tapered over months. hydroxychloroquine 6 mg/kg/day, tab mycophenolate mofetil given and continued with oral levothyroxine. vitamin D3 and calcium supplements. and prescribed SPF 50 sunscreen to be applied before sun exposure. Subsequent follow up showed marked improvement in joint pain and pain abdomen.

Figure 1: Malar rash over cheeks.

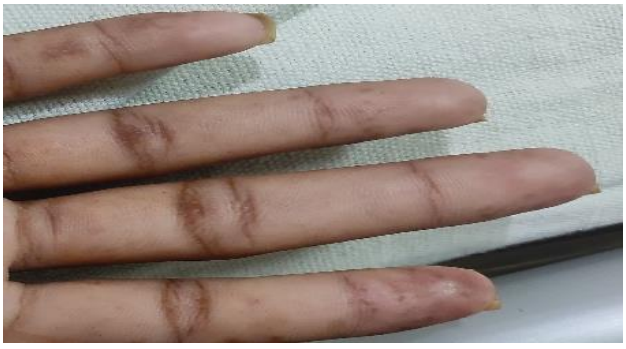

Figure 2: Discoid vasculitis lesions over finger tips.

DISCUSSION

Juvenile onset systemic lupus erythematosus is a severe, chronic autoimmune disease with multi-system impairment that is diagnosed in people below the age of 18 years. Although lupus is more prevalent in females, this predominance is less pronounced in the pediatric population with greater morbidity and mortality in this group.[6] The new EULAR/ACR 2019 classification criteria use positive antinuclear antibodies (ANA) as an entry criterion and have weighted items, with weights ranging from 2 to10. The items are organized in 7 clinical and 3 immunological domains and within each domain only the highest item is to be counted. A score of 10 and above is needed to classify as SLE. The rule is that items are to be attributed to SLE and counted only if there is no more likely alternative diagnosis.[7] Frequency of clinical hypothyroidism reported in the literature ranged from 3-21.4%. As compared to males the prevalence is higher in females. Research has shown that arthritis and skin damage are most prevalent in patients with SLE with hypothyroidism, whereas hematological abnormalities and neuropsychiatric symptoms were not that common.[8]

Hypothyroidism is the most common thyroid disorder seen in patients of SLE. 15-19% of patients with lupus have hypothyroidism. In compare to male female SLE patients have a tendency to have a higher prevalence of both subclinical and clinical hypothyroidisms.[9] There are studies that show clinical correlation between severity of outcome of both these disorders. Dong et al found that delaying the treatment of subclinical hypothyroidism delays the remission of SLE.[9] Rates of hyperthyroidism in people with SLE range from 3% to up to 9% of the populations. Alves et al in Brazil reported two cases of adolescents aged 11 and 13 years respectively with a previous diagnosis of Hashimoto's thyroiditis who developed juvenile SLE over a one-two year period.[10]

CONCLUSION

This case report highlights the rare initial association of autoimmune thyroiditis with juvenile systemic lupus erythematosus. recognizing overlapping autoimmune disorders in pediatric patients. early identification and management are crucial for improved outcomes. assessment of thyroid function in pediatric SLE patients as a part of biochemical and immunological profiles may help in early detection of associated thyroid disorders.

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