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Celiac Disease Associated with Systemic Lupus Erythematosus: A Case Report

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Abstract **Case Report**

***Background*:** Celiac disease (CD) is a chronic immune-mediated disorder with wide clinical spectrum. Its association with autoimmune diseases has been reported in several studies but coexistence with systemic lupus erythematosus (SLE) is rare. ***Case Report*:** We report a case of 47-year-old female who developed simultaneously symptoms of Celiac disease and systemic lupus erythematosus. ***Conclusion*:** The association of CD and SLE has been rarely reported and it may be explained by the sharing of a common pathogenic basis involving genetic susceptibility and overlap of autoantibodies.

Keywords: Celiac disease, systemic lupus erythematosus, autoimmune diseases.

BACKGROUND

Celiac disease (CD) is a chronic immune-mediated disorder triggered by the ingestion of gluten that occurs in genetically predisposed patients. Its association with autoimmune diseases has been reported in several studies but coexistence with systemic lupus erythematosus (SLE) is rare [1]. There are some data indicating that patients with SLE may develop CD and vice versa, underlining a possible association between these diseases. Their pathogeneses are still not entirely clear; however, many similarities exist involving genetic susceptibility and similar environmental triggers [2]. We herein report the case of a patient who developed simultaneously symptoms of CD and SLE.

CASE DESCRIPTION

A 47-year-old female with no particular pathological history, presented with episodes of arthritis and inflammatory arthralgia involving peripheral joints notably the ankles and wrists, bilaterally and symmetrically, with photosensitivity, alopecia, and general weakness, evolving over the course of 8 months prior to her admission. Her initial workup revealed microcytic hypochromic anemia (hemoglobin values from 6.2 to 9.2 g/dl), an elevated erythrocyte sedimentation rate (ESR) at 133mm/h with a C-reactive-protein (CRP) level normal. Her immunological tests came up positive for anti-nuclear antibodies (ANA) at 10.2 determined by Elisa method (1.2), anti-double-stranded DNA (anti-dsDNA) at 55 IU/ml, and anti-SSA/Ro and anti-SSB/La at 200 IU/ml and 38.4 IU/ml respectively. Serum C3 and C4 concentrations were within normal limits, and tests for anticyclic citrullinated peptide (anti-CCP), and rheumatoid factor were negative. The transthoracic echocardiogram revealed no abnormalities, while kidney function tests detected a positive 24-hour proteinuria level of 0.27 g/24h. Minor salivary gland biopsy showed sialadenitis grade IV. The diagnosis of systemic lupus erythematosus (SLE) with Secondary Sjogren's syndrome was established. Considering the presence of anemia, a comprehensive investigation for malabsorption was undertaken revealing an iron deficiency with ferritin levels at 10 ng/ml, hypocholesterolemia at 0.9 g/l, and hypoalbuminemia at 25 g/l. Anti-tissue transglutaminase antibodies Ig G were positive at 120 U/ml (10), while anti-endomysial antibodies (IgA and IgG) and anti-tissue transglutaminase antibodies IgA were negative. Mucosal histopathology revealed villous atrophy classified as 3A according to Marsh's scale. Thus the diagnosis of CD associated with SLE was made and the patient has been started on a gluten-free diet. Antimalarial drugs were initiated after pre-therapeutic evaluation. A clinical and biological improvement was noted after one year of follow-up.

DISCUSSION

Celiac disease is a chronic immune-mediated disorder with wide clinical spectrum including classic presentation of malabsorption with diarrhea and weight loss as the most common manifestations (57%) [3].

Asymptomatic celiac disease accounts for 43% of diagnosed patients and iron-deficiency anemia is the most frequent extraintestinal manifestations occur in 27% of patients with silent celiac disease, which was the case for our patient [3, 4]. In several studies, a significant increase in prevalence of autoimmune diseases (up to 15%) has been noted in patients with CD and their first-degree relatives as compared to controls [5]. In celiac patients, early onset of symptoms and a family history of autoimmunity increase the risk of developing other autoimmune conditions, while adhering to a gluten-free diet seems to have a protective effect [1, 5, 6]. These associations may be explained by the sharing of a common pathogenic basis involving genetic susceptibility, similar environmental triggers, and the loss of intestinal barrier [1]. Nevertheless, the coexistence of CD with SLE is rare and still unclear. Several hypotheses have been suggested to clarify this association, notably the HLA predisposition (HLA B8 DR3) [7], overlap of autoantibodies [3], and the exposure to gluten which would increase the risk of developing autoimmune diseases [8]. Celiac disease precedes SLE in some studies, however the diagnosis is made simultaneously in the majority of cases [2]. This association of CD and SLE is often underrecognized due to the similarities and the polymorphic nature of both diseases. Fifty percent of the patients with SLE present with gastrointestinal manifestations in the course of their disease [2,9]. On the other hand, patients with CD may develop extraintestinal symptoms mainly iron-deficiency anemia [2]. In a recent study, antinuclear antibody (ANA) were found in 8.9% of CD patients vs 0% in healthy controls and all patients were tested negative for anti-dsDNA [10], further more complicating the diagnosis of this occurrence, and warranting additional diagnostic tests. Our patient was diagnosed with SLE with Secondary Sjogren's syndrome on the basis of arthritis, photosensitivity, and alopecia with positive ANA, anti-dsDNA, anti-SSA/Ro and anti-SSB/La. The clinical and biological improvement noted after treatment with antimalarial drugs and the positive response to gluten-free diet support the coexistence of SLE and CD in our patient.

The association between CD and other autoimmune diseases is possible due to the similarities in pathogenesis. Systemic lupus erythematosus involves the gastrointestinal tract which is well documented but the coexistence with CD is rare. Further studies are needed to better elucidate this association.

LEARNING POINTS

- The prevalence of autoimmune diseases experiences a significant increase in patients with CD.
- The coexistence of CD and SLE is rare and may be explained by the sharing of a common pathogenic basis involving genetic susceptibility notably the HLA predisposition (HLA B8 DR3).

DISCLOSURE

Conflict of Interest: The authors declare no conflict of interest.

Patient Consent: The patient consented and gave permission to publish their clinical history.

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