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Case Report

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Hematological and Musculoskeletal Manifestations of Systemic Lupus Erythematosus in A Patient with Chronic Hepatitis C Virus Infection

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Abstract

Systemic lupus erythematosus (SLE) is an autoimmune disease that can present with various clinical manifes- tations, and early diagnosis and treatment are crucial to prevent irreversible organ damage. Here, we report a case of a 35-year-old female with chronic hepatitis C virus (HCV) infection who presented with hematolog- ical and musculoskeletal symptoms, ultimately leading to a diagnosis of SLE. The patient's workup included positive ANA and dsDNA tests and a CT scan revealing an oval-shaped lytic lesion in the medullary cavity of the right iliac bone.

Keywords: Sle, Ana Positive, Autoimmune Disease, Hepatitis C Virus

Abbreviations: SLE is Systemic Lupus Erythematosus HCV - Hepatitis C Virus Anti-ANA - Antinu- Clear Antibody.

1. Introduction

Systemic lupus erythematosus is an autoimmune condition in which the body's immune system which mainly involves antibodies, attacks the body's own cells involving various organs and organ systems [1]. Symptoms may vary among people from mild to severe [1]. Most commonly occurring symptoms include swollen joints that may be painful, fever, generalized body rash may be associated with photophobia, malaise, occasional chest pain, loss of hair, oral and gastrointestinal ulcers, enlarged lymph nodes [1]. The disease corresponds in an intermittent pattern in which there are periods of intense symptoms called flares and periods of mild symptoms [1]. Very little is known about the exact mechanism that leads to this disease [1]. It is considered that most likely it involves a complex pattern of correlation between environmental and genetic factors [2].

2. Case Report

A 35-year-old female with a history of chronic HCV infection presented with postprandial vomiting, hemop- tysis, gum bleeding, per rectal bleeding, bilateral lower limb pain, and pain in her knee, shoulder, wrist, DIP joint, and PIP joint. On examination, the patient appeared pale and had a rash on her arms and hands; she also had a butterfly-like rash on her face, which is a characteristic sign of SLE; and she also had oral ulcers. She had a body temperature of 100 °F at the time of examination, and her respiratory rate was 22 breaths per minute. Her oxygen saturation and blood pressure were within normal limits. The patient had been taking medications for chronic HCV until one year ago, when her symptoms improved and she became negative for HCV RNA. A complete blood workup is shown in table 1.

Further workup revealed positive anti-HCV, ANA, and anti-dsDNA antibodies, and endoscopic examination showed multiple telangiectasias in the stomach and upper oropharynx. A CT scan revealed an oval-shaped lytic lesion in the medullary cavity of the right iliac bone, as shown in figure 1. The above-mentioned findings led to the diagnosis of 3.

3. Management

The patient's medications included pulse steroids, aspirin, and hydroxychloroquine. Within 15 days, her symptoms improved, and her blood counts normalized. She was discharged the following week and is now undergoing clinical follow-up in the rheumatology outpatient department.

Blood component	Unit	Result
White blood cells	/cu.mm	2.98
Red blood cells	Mill/Cu.mm	8.0
Hematocrit	%	23.0
Mean corpuscular hemoglobin	pg	26.7
Mean corpuscular hemoglobin concentration	g/dl	34.7
Platelet count	/cu.mm	3700
RDW	%	15.2
Lymphocytes	%	35
Monocyte	%	03
Neutrophil	%	60
Eosinophil	%	02

Table 1: Complete Blood Count

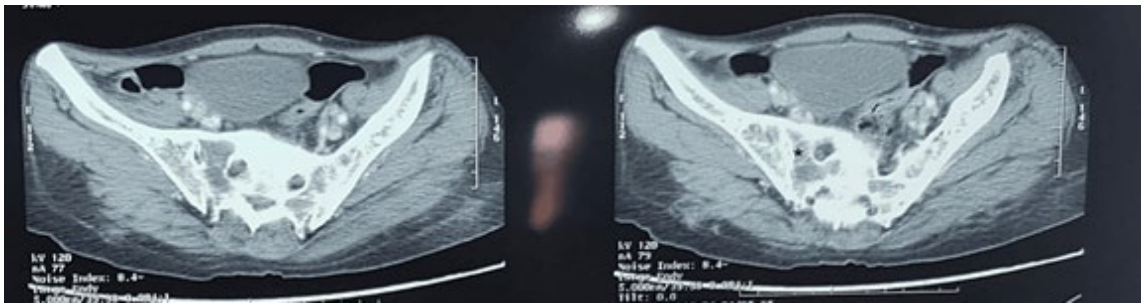

Figure 1: Pelvic CT with IV Contrast (* shows lytic lesion in the medullary cavity)

4. Discussion

The presented case of a 35-year-old female with chronic hepatitis C virus (HCV) infection who was ultimately diagnosed with systemic lupus erythematosus (SLE) underscores the complex nature of autoimmune diseases and the importance of a comprehensive diagnostic approach. This case raises several important points for discussion. The patient exhibited a variety of symptoms involving different organ systems, including hema- tological manifestations such as hemoptysis, gum bleeding, and rectal bleeding, along with musculoskeletal symptoms affecting multiple joints. Additionally, the presence of a characteristic butterfly rash on the face, oral ulcers, and telangiectasias highlighted the involvement of the skin and mucous membranes [3]. This broad spectrum of symptoms emphasizes the multisystem nature of SLE and the need to consider it in the differential diagnosis of patients with such diverse clinical presentations. The presence of positive antinuclear antibodies (ANA) and anti-double-stranded DNA (dsDNA) antibodies [4] is indicative of an autoimmune process, and these findings were essential in guiding further investigations. The combination of clinical symptoms and positive autoantibodies added weight to the suspicion of an autoimmune disorder, prompting the need for further workup.

The coexistence of chronic HCV infections adds complexity to the diagnostic process. Chronic infections can lead to immune dysregulation and mimic autoimmune conditions. Furthermore, autoimmune diseases can also be triggered by infections. It is essential to differentiate between the effects of chronic HCV infection and the development of SLE. The fact that the patient's symptoms improved and HCV RNA became negative after treatment may have contributed to the unmasking of underlying autoimmune activity [5].

The CT scan revealing an oval-shaped lytic lesion in the medullary cavity of the right iliac bone added an additional layer of complexity to the case. Bone lesions are not uncommon in SLE and can result from a variety of mechanisms, including immune complex deposition, vasculitis, or secondary infections. The combination of clinical symptoms, positive autoantibodies, and imaging findings helped guide the diagnosis. Early diagnosis and treatment are crucial for autoimmune diseases like SLE. The initiation of pulse steroids, aspirin, and hydroxychloroquine resulted in rapid improvement of symptoms and normalization of blood counts [6]. This response underscores the effectiveness of targeted immunosuppressive therapy in controlling autoimmune processes.

5. Conclusion

This case report emphasizes the complexity of autoimmune diseases and the need for a thorough and sys- tematic approach to diagnosis, especially when multiple organ systems are involved. The coexistence of chronic infections, such as HCV, can further complicate the diagnostic process by mimicking or exacerbating autoimmune symptoms. Positive autoantibodies, such as ANA and anti-dsDNA antibodies, serve as important markers in the evaluation of autoimmune disorders, guiding further investigations and diagnostic decisions. The presented case also underscores the potential for reversible organ damage if timely diagnosis and appropriate treatment are not initiated. The prompt response to immunosuppressive therapy highlights the signifi-

cance of early intervention in preventing irreversible harm. In summary, this case report reiterates the significance of clinical suspicion, comprehensive diagnostic workup, and collaboration among different medical specialties in managing complex cases with overlapping clinical manifestations. Autoimmune diseases like SLE require a multidisciplinary approach to ensure timely and accurate diagnosis, leading to effective management and improved patient outcomes.

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