Case Report

An interesting case of systemic lupus erythematosus with multiple myeloma

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Abstract

A rare association exists between systemic lupus erythematosus (SLE) and multiple myeloma (MM). SLE is associated with a variety of symptoms. A combination of MM and SLE is uncommon in the young population. An unusual case of SLE associated with MM is described here. We present the case of a 39-year-old woman who was a known case of SLE and presented with severe chest and abdominal pain. We summarize the clinical characteristics of MM in SLE. The possible mechanisms that could be at the root of this association are also discussed.

Keywords: Lupus erythematosus, multiple myeloma, neoplasms, systemic

Case Report

In September of 2021, a 39-year-old woman was admitted to our hospital with severe chest and abdominal pain with vomiting that had persisted for two days prior. She also expresses dissatisfaction with her weight, which she claims has decreased over five months. Based on intermittent arthritis, thrombocytopenia, and anemia, as well as antinuclear antibody titers of 1:320 with a homogeneous pattern and antibodies to native double-stranded (ds) DNA titers of 1:60, she was diagnosed with systemic lupus erythematosus (SLE) in January 2018. A negative result for antibodies against rheumatoid factor, lupus anticoagulant, and anticardiolipin was obtained. In addition to other medications, she was treated for three years with hydroxychloroquine (400 mg twice a day), steroids, and analgesics. She had not consulted a rheumatologist at any time in the past. She was never given any specific treatment for SLE. In 2018, a kidney biopsy revealed that the patient had lupus nephritis which was treated conservatively.

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The following laboratory results were obtained during the current admission: hemoglobin 10.2 g/dL, mean corpuscular volume (MCV) 80.8 fL, white cell count 8.0 × 9/L, and platelets 2.4 lakhs. Her prothrombin time and partial thromboplastin time were both within normal ranges, as well. In addition, the electrolytes and renal function were both within normal ranges of values. A lupus activity panel revealed that there were no anti-dsDNA antibodies present, that the C3 level was 25 mg/dL, and that the C4 level was within normal ranges. In this particular case, there were no signs of a flare-up of SLE. Ultrasonography indicated that the study was normal. Her total serum protein concentration was 9.9 g/dL, and her albumin concentration was 2.2 g/dL. A 24-h urine protein collection revealed a total of 275 mg over 24 h (reference range: 150 mg/24 h). Paraproteinemia of 6.01 g/dL of immunoglobulin (Ig) G type, as determined by serum protein electrophoresis and immunofixation, was confirmed, as was associated with reciprocal hypogammaglobulinemia. The level of serum 2 microglobulin was 6.0 mg/dL (within the range of 1.1–2.4). Urine protein electrophoresis and immunofixation revealed the presence of monoclonal IgG (2.87 mg/dL) as well as free monoclonal light chains in the urine sample. The bone marrow biopsy showed 70 percent cellularity, myeloid and megakaryocytic hyperplasia, as

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well as erythroid hypoplasia, and low iron reserves. Molecular analysis revealed that the plasma cells had mild nuclear immaturity and minimal dysplasia. Using a cluster of differentiation (CD) 138 staining, it was discovered that the plasma cell percentage was at least 25%. A 17:1 ratio of kappa plasma cells to lambda plasma cells was found in this study. Complete skeletal survey results were normal, according to the findings. Upon discovering that she had a smoldering IgG multiple myeloma (MM), she was started on treatment with thalidomide and dexamethasone the following day.

Discussion

The link between SLE and lymphoproliferative malignancies is well established, and the risk of developing these cancers has recently been quantified in a large international cohort of 9547 patients.[1]

A rare occurrence of MM and SLE coexisting in a young patient is still uncommon. SLE symptoms may appear before, concurrently with, or develop after the diagnosis of MM.[2] The diagnosis of MM was made after the onset of SLE in our patient, as was the case in the majority of reported cases. Pehamberger, Sendagorta, and Vaiopoulos each described one instance in which both diseases occurred at the same time, while Afeltra reported a case of SLE in a patient who had a prior history of MM.[3-6] However, the exact mechanisms that are responsible for the observed increased risk of lymphoproliferative malignancies in SLE are still not completely known. Because of the impaired immune surveillance in SLE, B cell clones can evade normal regulatory mechanisms. Increased resistance to apoptosis may play a role in the progression of the malignant transformation further along the line. Apoptosis resistance may be associated with mutations in the phosphatase and tensin homolog (PTEN) gene as well as overexpression of the Bcl-2 protein. MM patients have an increased risk of rheumatoid arthritis and SLE in their first-degree relatives. This suggests a role for genetic factors in the development of these diseases.[7] It is possible that immunosuppressive therapy, persistent Epstein-Barr virus infection, or other coexisting autoimmune disorders increase the risk of developing cancer in SLE patients. A review of the cases of concurrent MM and SLE reveals some differences from the cases of isolated MM. Although it is difficult to draw broad conclusions from a small number of cases, there are some. In this study, the median age at diagnosis of MM was 45 years, which is significantly younger than the median age at diagnosis of MM in the general population, which was 64 years at the time of diagnosis.[8] Because of our patient's young age, we believe that age should not be a barrier to a workup for MM in SLE patients; according to the findings, based on frequency and severity, this patient population did not appear to differ from that of patients with isolated MM in terms of presenting symptoms, extramedullary manifestations, immunoglobulin type, response to therapy, and prognosis. The fact that only two of the patients had previously been diagnosed with monoclonal gammopathy of undetermined significance (MGUS) before being diagnosed with MM is particularly noteworthy. In line with previous research, which has suggested that MGUS in the context of SLE is a generally benign process, the current findings are encouraging.[9]

Conclusion

An investigation into the relationship between cancer, specifically hematological neoplasms, and autoimmunity is conducted. Even though the coexistence of SLE and MM is extremely rare, although it is uncommon, the detection of monoclonal gammopathy in SLE patients is not uncommon. It is necessary to investigate to rule out the presence of underlying myeloma.

Key message

Multiple myeloma should be considered in SLE patients when the clinical situation calls for it, regardless of their young age, race, level of disease activity, or duration of disease.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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