

CASE REPORT

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From multiple myeloma to leishmaniasis: The cause is fever!**Serhat Sayin¹, Metin Bagci¹, Serdar Ugras², Abdulkadir Basturk¹**¹Selcuk University, Faculty of Medicine, Department of Hematology, Konya, Turkey²Selcuk University, Faculty of Medicine, Department of Pathology, Konya, Turkey

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**Abstract**

Leishmaniasis is a vector-borne parasitic disease that constitutes a major public health problem. Leishmaniasis presents with various clinical manifestations, from skin involvement to life-threatening visceral disease. Fever of unknown origin should be considered in the differential diagnosis. In this case, we describe a patient referred with a diagnosis of multiple myeloma, but ultimately diagnosed with leishmaniasis based on our evaluation, to draw attention to this disease.

Keywords: Fever, leishmaniasis, hypergammaglobulinemia, hepatosplenomegaly**Introduction**

Leishmaniasis is caused by an intracellular parasite transmitted to humans via the bite of the female sand fly. There are cutaneous, mucocutaneous, and visceral (kala-azar) forms. According to the World Health Organization, leishmaniasis is a parasitic disease and serious health problem worldwide, which presents with a wide spectrum of clinical symptoms and has the potential for fatal outbreaks [1]. Visceral leishmaniasis has characteristic symptoms, such as fever, hepatomegaly, splenomegaly, weight loss, and bone marrow suppression. Pancytopenia, hepatomegaly, hypergammaglobulinemia, and weight loss are common, particularly in late-presenting patients. The onset of visceral leishmaniasis can be acute or insidious, and the incubation period is 2 weeks to 8 months. If left untreated, the disease is typically fatal within 2 years as a result of a secondary bacterial infection or severe anemia. Diagnosis is typically made by microscopic determination of the amastigote parasite stage, through observation of tissue samples or cultures. Amastigotes are 1–4 µm-diameter

round or oval bodies with a rod-shaped kinetoplast and circular core. Many drugs are used to treat leishmaniasis, but the classic treatment is pentavalent antimony. In this article, we present a patient who presented at another clinic with multiple myeloma, but was diagnosed with leishmaniasis at our center and treated with liposomal amphotericin B. This notable case serves as a reminder that this disease can present with fever of unknown origin.

Case

A 51-year-old male presented to another clinic with weakness, fatigue, and fever every 2–3 days for the last 6 months. Hepatosplenomegaly, increased sedimentation rate (108 mm/h) and anemia (Hgb: 9 g/dL) were detected. Viral serology (hepatitis, parvo, CMV, Toxoplasma, EBV, HIV, herpes, and rubella) and antinuclear antibody tests were negative. Tests for Brucella and tuberculosis were negative (IgG, 25 g/L, range: 7–16 g/L); kappa light chain, 132 mg/dL, range: 6.7–22.4 mg/dL). Serum and urine immunofixation tests were consistent with biclonal gammopathy, based on both IgA kappa and light chain lambda. The bone marrow aspirate was reported as kappa-positive monoclonal plasma cell myeloma (plasma cell ratio = 15%). The patient was referred to us with a diagnosis of multiple myeloma. During our first evaluation of the patient, the high fever required us to review the differential diagnosis. In addition, the immunofixation

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test revealed biclonal gammopathy based on kappa and lambda; inconsistent with this, only kappa monoclonality was detected on the bone marrow evaluation. Considering that these findings were not expected in a patient with multiple myeloma, we repeated the serum and urine immunofixation tests, protein electrophoresis, and bone marrow aspiration to rule out that diagnosis. In the new protein electrophoresis analysis, polyclonal gammopathy and immunofixation tests were negative for monoclonality. In the bone marrow aspirate, 5% of the plasma cells were not monoclonal. After detecting amastigotes (Figure 1) during a detailed evaluation of the bone marrow, the microbiology and pathology clinics were consulted. The bone marrow aspirate materials were examined and a diagnosis of leishmaniasis was confirmed. Liposomal amphotericin B treatment was started. The fever, acute phase reactants, and hepatosplenomegaly completely resolved during the follow-up.

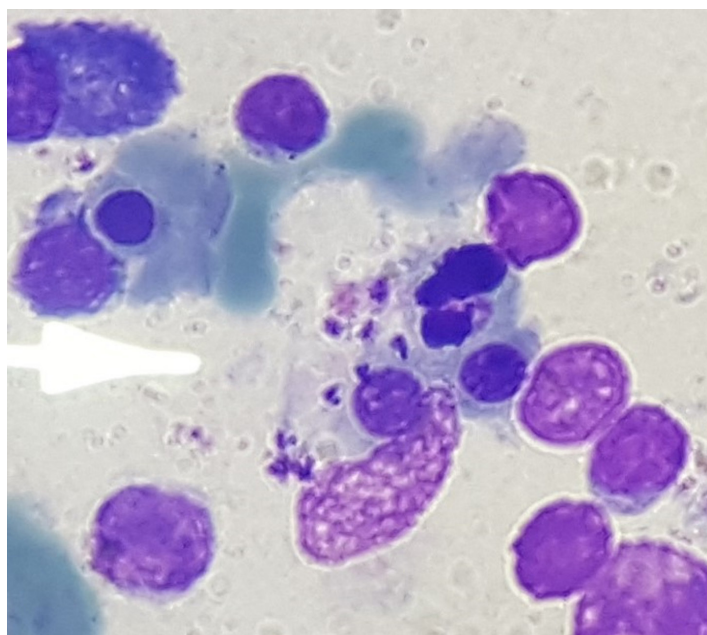


Figure 1. Amastigotes in the bone marrow aspirate (arrow)

Discussion

Visceral leishmaniasis is a parasitic disease frequently encountered in Mediterranean countries, including Turkey. It continues to be an important public health problem. Visceral leishmaniasis is endemic to Asia, Africa, the Americas, and Mediterranean countries. It is seen sporadically in Turkey. The characteristic symptoms of visceral leishmaniasis include fever, hepatomegaly, splenomegaly, weight loss, and bone marrow suppression. Pancytopenia, hepatomegaly, hypergammaglobulinemia, and weight loss are common, particularly in late-presenting patients. Our patient was anemic and hepatosplenomegaly and hypergammaglobulinemia accompanied his fever.

Polyclonal hypergammaglobulinemia and an increased sedimentation rate are common features of visceral leishmaniasis, as in our case. Monoclonal gammopathies are usually associated with the formation of monoclonal protein bands in the globulin region. These bands are usually caused by plasma cell disorders but can accompany various diseases, including solid tumors (colon, breast), sarcoidosis, parasitic diseases, rheumatoid arthritis, AIDS,

chronic liver disease (particularly HCV-related), and pyoderma gangrenosum [2,3]. Only a few case reports have concluded that monoclonal gammopathy is the precursor of visceral leishmaniasis [4,5]. Some case reports have shown that visceral leishmaniasis can be misdiagnosed as multiple myeloma, as in our case [6,7]. Therefore, accurate evaluation of serum and/or urine monoclonal proteins and monoclonal plasma cells in bone marrow is of vital importance when diagnosing multiple myeloma, particularly in the presence of low levels of plasma cells in the bone marrow.

Parasitological, serological, and molecular methods can be used to diagnose visceral leishmaniasis. A parasitological diagnosis is the gold standard because of its high specificity. The amastigotes can be detected by examining stained spleen, lymph node, and bone marrow aspirate samples. Our case was diagnosed based on the presence of amastigotes in the bone marrow aspirate.

Liposomal amphotericin B, pentavalent antimony compounds, miltefosine, pentamidine, amphotericin B deoxycholate, and paromomycin are used to treat leishmaniasis. Our patient completed the liposomal amphotericin B treatment without side effects or complications.

In conclusion, visceral leishmaniasis should be considered in patients who present with fever, hypergammaglobulinemia, or hepatosplenomegaly. An assessment of monoclonality in serum, urine, and bone marrow is vital. Although parasitological methods are standard for diagnosis, serological methods are preferred due to their noninvasive nature. Also, although antimony compounds are the gold standard for treatment, liposomal amphotericin B is another option.

Conflict of interests

The authors declare that they have no competing interests.

Financial Disclosure

All authors declare no financial support.

Patient Informed Consent

Consent form was obtained from the patients before the article.

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