Brief Communication

Leishmaniasis resembling hematological malignancies. *The concern of differential diagnosis*

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Leishmaniasis is a chronic infectious disease caused by protozoa, such as *leishmania flagellate*. Infection is transmitted by insects.[1] Mediterranean countries are one of the major areas for this disease in the world.[2,3] The course of the disease may be acute, subacute, and chronic. Furthermore, several forms, such as visceral, cutaneous, and mucocutaneous have been described.[1] The diagnosis relies on serological tests, however, parasitological findings in macrophages of the bone marrow (BM) can be observed. Several signs of disease, such as fever, gastrointestinal disorders, splenomegaly and hepatomegaly, generalized lymph adenomegaly and pancytopenia, may resemble some hematological malignancies, for which some challenging concerns may arise in the differential diagnosis,[4,5] as recently observed in a series of 6 cases sharing very similar pathological features.

There were 6 patients (3 males, 3 females) with an average age of 34 (21-59) years. In all patients, the symptoms started gradually with uncharacteristic manifestations, such as fatigue, gastrointestinal discomfort, loss of appetite, nausea, and vomiting, accompanied by fever. Temperature increased twice a day, and was followed by shivering and very often, by night sweating. Antibiotics and antipyretics were used without any benefits. Patients were kept under our attention due to the presence of pancytopenia, unclear variation of temperature, and the increased and pronounced discomforts. Upon physical examination, all patients presented with splenomegaly, and 3 had lymphadenopathies. The laboratory tests pointed to pancytopenia with lymphocytosis and monocytosis, moreover, important polyclonal hypergammaglobulinemia ranging from 2-6 gr/dl (average value: 4 gr/dl) was observed. The BM aspirates and trephine biopsies were performed in all patients. Hypocellularity was found in all cases, moreover in 3 patients, the examination of BM smears revealed 15-25% polyclonal lymphocytes infiltrating the BM. Lastly, both intra- and extracellular protozoa resembling leishmaniasis were detectable only in 3 cases. In the remaining cases, no intramacrophagic or extracellular protozoa were observed, so the diagnosis was suspected and then confirmed by serological tests (direct agglutination, and anti-K39 antibody tests), after the evaluation of all other diagnostic procedures (morphological evaluation of BM smears, histological examination of BM trephine biopsies, serum, and urinary protein immunofixation, whole body CT scan, and so on) were performed in order to exclude a hematological malignancy. After the establishment of diagnosis, patients received causal therapy with liposomal amphotericin B and rapidly recovered, the decrease of splenomegaly, as well as, the reduction of hypergammaglobulinemia and the improvement in hematological counts was observed.

In conclusion, some remarkable hematological findings, which are characteristic for leishmaniasis may resemble some of those associated with hematological malignancy, however, in the presence of polyclonal hypergammaglobulinemia, fever, splenomegaly, and pancytopenia, this infectious disease should be suspected and specific serologic tests should be carried out together with a BM examination.

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