Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Hematology

Visceral Leishmaniasis in Immunocompetent Adult Patient: Clinical Presentation

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DOI: 10.36347/sjmcr.2024.v12i06.034 | **Received:** 13.04.2024 | **Accepted:** 25.05.2024 | **Published:** 12.06.2024

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Abstract **Case Report**

Visceral leishmaniasis (VL) presents diagnostic complexities in adults due to its diverse clinical manifestations. This article presents a case study of a 33-year-old male with severe pancytopenia, anemia, weight loss, and fever, eventually diagnosed with VL. Through meticulous examination and diagnostic procedures, including bone marrow aspirate and serological assays, VL was confirmed. Treatment with liposomal Amphotericin B led to rapid clinical improvement without relapse. Epidemiological insights underscore the growing incidence of VL in adults, irrespective of immunocompetence, necessitating enhanced clinical suspicion. Recommendations for management, including early treatment and preventive measures, are discussed, emphasizing the significance of timely diagnosis and intervention in endemic regions.

Keywords: Visceral Leishmaniasis, Immunocompetence, Endemic Regions.

INTRODUCTION

Visceral leishmaniasis (VL) is a disseminated infection endemic in the countries of the Mediterranean basin, and mainly affects the reticuloendothelial system. It is caused by a group of protozoan parasites of the genus Leishmania transmitted to human via the bite of phlebotomine sandflies. The diagnosis of VL in children is relatively straightforward, as they often present with a complete clinical picture. In contrast, the presentation is less suggestive in adults, which can result in delayed diagnosis and treatment. Visceral leishmaniasis is frequently reported in severely immunosuppressed individuals. The occurrence of disease in otherwise healthy patients is uncommon. The clinical diagnosis of visceral leishmaniasis is confirmed by detection of amastigotes in bone-marrow aspirate.

CASE PRESENTATION

A 33-year-old male from a rural area was admitted to the Department of Hematology and bone marrow transplant, because of one month history of anaemic syndrome without infectious or haemorrhagic syndrome associated with weight loss and fever. The patient had no history of any kind of previous illnesses.

Laboratory results revealed severe pancytopenia: white blood cell: 0.65 G/l, hemoglobin: 7.6 mg/l and platelet: 100 G/l. These findings can be signs of hematological disorders (such as myelodysplastic diseases) or may indicate several infections. The erythrocyte sedimentation rate and C-reactive protein (135 mg/l) were elevated but normal level of alanine aminotransferase and creatinine were observed. The gamma globulin level was beyond the measurable range with decreased albumin level. Physical examination showed mild splenomegaly and the liver size was normal. The patient's general condition was relatively good. He was further examined to rule out infections with similar signs and symptoms, connective tissue diseases and malignancies and all were found negative. Examination of the immune status of our recent patient excluded immunosuppression or HIV co-infection. HIV test were negative.

The clinical diagnosis of visceral leishmaniasis was confirmed by detection of amastigotes in bone-marrow aspirate and excluded malignancy (figure 1) followed by serological and molecular assays. Acute-phase serum sample was tested by Leishmania Western-blot IgG qualitative Immunoblot Assay, that showed well-defined bands which are indicative for the presence of specific antiLeishmania IgG in the sample.

Amphotericin B was used conform to international recommendations. After second day of

treatment the patient become free of fever, the leukocyte and platelet count continuously increased reaching 3.63 G/l and 130 G/l respectively. During treatment only temporary mild creatinine elevation (160 µmol/l) were observed, which normalized after hydration. In the follow-up period no relapses were observe.

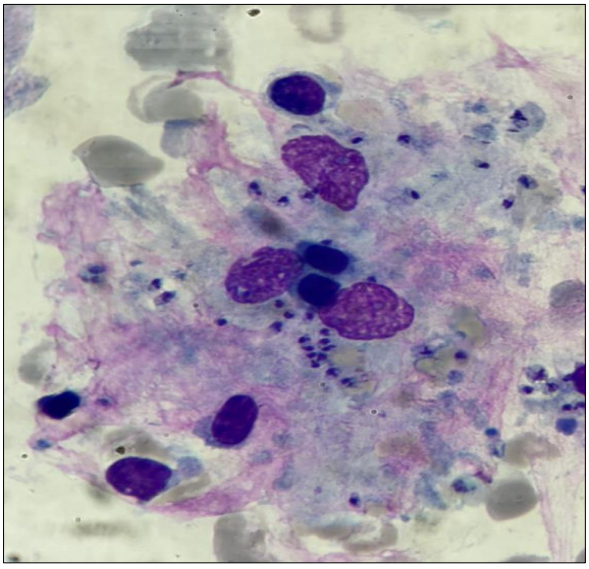

Figure 1: Bone Marrow Aspirate Showing Amastigote Forms

DISCUSSION

Visceral leishmaniasis (VL) which is a disease caused by the protozoon, Leishmania, occurs widely worldwide and it is widespread in most of the countries in the Mediterranean basin. The infection which is transmitted by a sandfly (Phlebotomus) vector, has a prolonged incubation period and insidious onset. VL generally affects children unmanaged VL poses substantial mortality threats if therapeutic measures are not promptly instituted.

Leishmaniasis in Morocco are endemic diseases. Three forms of leishmaniasis are reported, visceral leishmaniasis, cutaneous leishmaniasis caused by *Leishmania tropica* and cutaneous lesions due to *Leishmania major*. *Leishmania infantum*, a common parasite inducing visceral leishmaniasis, was observed thereafter in cutaneous lesions. The first case of cutaneous leishmaniasis due to *L. tropica* was isolated since 1987. Visceral leishmaniasis (VL) most often affects children under the age of five. In recent years, however, we have seen an increase in the number of adults affected, whether immunocompromised or immunocompetent.

In our case, the patient was not infected with HIV, and no other cause of immunodepression was found. However, we do not rule out the possibility of the presence of a discrete immunodeficiency which could not be identified by our investigations. In adults, even those who are immunocompetent, the clinical presentation is less suggestive than in children: the frequency of splenomegaly and fever barely exceeds 80% of cases depending on the series, particularly in cases of *L. infantum* infection [2-4]. In addition to these clinical abnormalities, there were biological disturbances. Cytopenia is most frequently found and may affect the three blood lines. Serum protein electrophoresis and measurement of the sedimentation rate also contributed to the diagnosis. An inflammatory syndrome is often found. This often includes: hyperprotidemia, polyclonal hypergammaglobulinemia with an albumin/globulin ratio that is often inverted, and an accelerated sedimentation rate [1, 2].

Diagnosis requires a bone marrow sample stained with May Grünwald Giemsa. Direct examination reveals amastigote forms, typically within phagocytic cells. The small parasite (2-5µm) is characterised by the simultaneous presence of a round or oval nucleus and a punctiform or elongated kinetoplast [4]. Serological tests provide the most widely used indirect methods of diagnosis. The indirect fluorescence antibody test, the enzyme-linked immunosorbent assay, and the Western blot are widely used [10].When available, molecular diagnosis is an excellent tool for the diagnosis and post-treatment monitoring of leishmaniasis and for studying asymptomatic parasite carriers. PCR detects parasitaemia levels of less than 1 parasite/ml. Sensitivity is similar for blood samples. PCR can also be used to identify the parasite species or strain [4-10].

Liposomal Amphotericin B was the treatment of choice, according to international guidelines [11] which is effective in more than 90 % of cases, with a short treatment duration and good tolerance. Currently, pentamidine is not recommended because of suboptimal efficacy and toxicity [12].

Prevention and Control in our context include vector and reservoir control, active and passive case detection alongside early treatment free of charge.

CONCLUSION

Visceral leishmaniasis is a rare disease in adults, although there has been an increase in the number of cases reported in recent years. It can occur in adults even in the absence of any cause of immunodepression. Symptoms in adults are usually atypical, but the diagnosis should be considered.

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