

# Visceral leishmaniasis in an immunocompetent patient

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## Abstract

A 26-year-old patient was admitted with a 6-month history of fever, fatigue, and unintentional weight loss. Abdominal CT described a heterogeneous hepatosplenomegaly. Laboratory studies revealed leucopenia, anemia, and elevated CRP. Bone marrow aspirate revealed amastigotes compatible with *Leishmania* spp. Was treated with liposomal amphotericin B with favourable outcome. Authors intend to raise awareness of VL in immunocompetent patients.

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**Key clinical words:** fever, anemia, leishmaniasis, immunocompetent

**Key clinical message:** Visceral leishmaniasis in immunocompetent patients is rare and should be suspected in patients with fever, bicytopenia and elevated inflammatory markers.

A previously healthy man with 26-year-old presented to the emergency department with a 6-month history of fever, fatigue and an unintentional 12 kilogram weight loss. At physical examination, an enlarged spleen was notable. Further studies revealed a leucocyte count of 2200 per cubic millimeter, a hemoglobin level of 9.4 g per deciliter, a platelet count of 200,000 per cubic millimeter and hyperglobulinemia. Blood cultures as well as serologies for human immunodeficiency virus, hepatitis B virus, hepatitis C virus, Epstein–Barr virus, and cytomegalovirus came back negative. Computed tomography (CT) of the abdomen confirmed the presence of a heterogeneous hepatosplenomegaly (Figure 1A). Examination of a bone marrow aspirate revealed the presence of amastigotes within the macrophages' cytoplasm, a classic appearance of *Leishmania* spp (Figure 1B). Leishmaniasis is a globally widespread zoonosis that is transmitted by the bite of an infected female phlebotomine sandfly. Domestic dogs are the parasite reservoirs. Clinically, leishmaniasis is subdivided into cutaneous, mucocutaneous and visceral (kala-azar) forms. The most severe form is Visceral leishmaniasis (VL) that is characterized by a disseminated intracellular protozoan infection that targets tissue macrophages in the liver, spleen and bone marrow. Both *Leishmania infantum* and *Leishmania donovani* can cause VL,

being *Leishmania infantum* the most prevalent pathogen in Portugal and remaining Mediterranean countries. The patient started treatment with liposomal amphotericin B leading to complete symptom resolution and splenomegaly on physical examination. Moreover, the differential diagnosis in a patient with fever and splenomegaly must include other infective causes such as typhoid, tuberculosis, leptospirosis; autoimmune disorders such as rheumatoid arthritis, sarcoidosis, amyloidosis and systemic erythematous lupus and haematological disorders such as leukaemia, lymphoma, polycythaemia vera and myelofibrosis. The present report intends to raise awareness of VL in immunocompetent patients that should be included in the diagnostic workup of patients with splenomegaly.

### **Compliance with ethical standards**

**Conflicts of interest:** None to declare.

**Human and animal rights:** This article does not contain any study with human and animals performed by any of the authors.

**Informed consent:** Informed consent was signed.

**Contributors** DS and MS: acquisition of data, literature review, clinical and imaging data review and final manuscript writing. AIR, MC, SAD, SAS, MM, AP, AM, ER and ML: imaging data review, and final manuscript writing.

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### **References:**

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### **Figures Legends:**

1A: CT sagittal images shows and heterogenous hepatosplenomegaly with a 18cm spleen.

1B: Leishmania spp. in May Grunwald Giemsa (MGG) stained bone marrow aspirate smear. Multiple amastigotes are visible in the macrophage cytoplasm, exhibiting a nucleus (blue arrow) and a kinetoplast (red arrow).



