

# VISCERAL LEISHMANIASIS IN A PATIENT WITH AORTIC CORONARY BYPASS TRANSPLANT AND HEPATITIS C- CASE REPORT

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## Abstract

**Aims:** *Visceral leishmaniasis (kala-azar) caused by the protozoal parasite Leishmania donovani, is one of the major causes of worldwide morbidity and mortality. In this case report, we present a female patient, who had been diagnosed with Visceral Leishmaniasis.*

**Case report:** *A 56-year-old woman from Skopje, Republic of Macedonia, who was in Barcelona and Istanbul a year ago, was taken to the state hospital because of fever and hepatosplenomegaly. The diagnosis is made with bone marrow biopsy. The patient had previously an aortic coronary bypass transplant. During the stay of the Intensive Care and Therapy Department at the Clinic for Infectious Diseases and Febrile Conditions in Skopje, Hepatitis C virus has been laboratory diagnosed. Unfortunately, the patient ended with death.*

**Conclusion:** *We hope that with the presentation of this case, we will increase the need for further exploration of geographical changes, epidemiological characteristics and interconnections between leishmania parasites.*

**Keyword:** *leishmaniasis, protozoa, Hepatitis C*

## 1. INTRODUCTION

Visceral leishmaniasis (kala-azar) caused by the protozoal parasite *Leishmania donovani*, is one of the major causes of worldwide morbidity and mortality (1). Leishmaniasis is an inflammatory, chronic disease that affects the skin, mucous membranes and visceral organs, caused by intracellular parasites that are transmitted by infected sand flies of the genus *Phlebotomus*. The life cycle of *Leishmania* takes place in

two phases, the promastigote which lives extracellularly in the infected phlebotomes and the amastigote, which lives and reproduces intracellularly in the host's reticuloendothelial cells (2). Mammals, including foxes, rodents and dogs are infection reservoirs (3). The amastigotes from *Leishmania* species have a particular affinity for replication in the liver, spleen, bone marrow and lymph nodes causing fatal lesions. (4). We present a complex case of a 56 year old woman from Skopje, Republic of Macedonia with three independent types of morbidities, as follows: aortic coronary bypass transplant, Hepatitis C and visceral leishmaniasis.

## 2. CASE REPORT

56-year old woman from Skopje, Republic of Macedonia of Albanian nationality was referred to University Clinic for Infectious Diseases and Febrile conditions in Skopje for management of visceral leishmaniasis. This patient 10 years ago was admitted to the Clinic "Filip II" because of a heart attack. An aortic coronary bypass transplant was made. She regularly went to controls for the examination of cardiac function and control of current therapy. She has been advised on several occasions to stop smoking cigarettes and reduce weight, but without success.

This patient begins to complain of burning headaches, cachexia, and pains when urinating. Then there was a high temperature that did not get off with antipyretics and antibiotics. Usually, the temperature was going up by half to one degree. CT scanning of cerebral blood vessels and carotids has been performed. An older finding was obtained. She was put on home treatment at the request of the family. On the control post-operative examination at the private clinic "Zan Mitrev" was found the following: thickened cusps and

first-degree failure of the mitral valve; atheromatous cusps and first-degree failure of the aortic valve; first-degree failure of the tricuspid valve; carotid arteries with a thickened intima; large calcifications of both bifurcations and stenosis of the left and right internal carotid artery for 60 %; easily reduced Doppler signals; cardiac ejection fraction EF-50%; arterial hypertension; hyperlipidemia; obesity; vertiginous syndrome.

After few days the patient complained of pain in the abdomen especially expressed under the left and right ribs. She started developing petechial hemorrhages. The symptoms worsened. She was retained for treatment at the Clinic for Infectious Diseases and Febrile Conditions, Intensive Care Department. She has given data in her history that she has stayed for one year in Istanbul and Barcelona. There was also jaundiced color of the skin and sclera (icterus). The blood count showed pathological values in SE 37 min; Triglycerides 2.77 mmol/l; liver tests AST 140.0 U/L; ALT of 71.0 U/L; in urinary sediment found 6-8 leukocytes, epithelial platelets, bacteria, amorphous urates. Haematological investigations revealed pancytopenia and hemoglobin level of 7 g/dl (severe anemia). At the same Clinic for Infectious Diseases was identified laboratory positive result for Hepatitis C virosis. Morphological structure of red blood cells was normocytic hypochromic cell with thrombocytopenia (platelet count  $97 \times 10^9/L$ ). Tuberculin test for Tuberculosis, Widal test for enteric fever and blood culture for Brucellosis was negative. Lumbar puncture excluded meningitis. Bone marrow smears revealed abundance of amastigote forms of *Leishmania donovani* (also known as LD bodies), both intracellular within the macrophages and extracellular. On general examination the patient had icterus, cyanosis and lymphadenopathy. On abdominal examination, the liver and spleen were enlarged along with petechial hemorrhages over chest and abdomen. A CT serial scan of the abdomen has been performed by using an i.v contrast. The following findings were found: in the parenchyma of the spleen there were focal hypo dense lesions with dimensions of 5-10 mm; small amount of free fluid in perihepatic region (ascites); 2-3 significantly enlarged lymph glands with a diameter measured in a short axis of 20 mm; multitude of enlarged lymph nodes with a diameter greater than 7-8 mm in the area around coeliac trunk, as well as around suprarenal paraaortal area; enlarged liver with a craniocaudal diameter of 250

mm; sub-serous edema of the cholecyst with periportal edema; adrenal glands increase density in the arterial phase in addition to secondary hyperactivation due to hypovolaemia; both kidney with neat form, and CT structure of the parenchyma with no steady changes in the duct system; urinary bladder with flat contours without endoluminal masses; pleural effusion to the right with a maximum thickness of 8 mm; smaller focal zones of paraseptal emphysema in posterior sides. The patient died four weeks after being admitted to the Clinic of Infectious Diseases and Febrile Conditions in Skopje.

### 3.DISCUSSION

According to Badro, the presence of fever, diarrhea, cough, malaise with hepatomegaly and splenomegaly should be a concern for leishmaniasis (5). According to Brandonisio, the leishmania is focused on the activation and function of macrophages and dendritic cells. As a consequence, there is a dysfunction of the immune system, which allows the proliferation of the parasite in the cells (6). Due to various forms of leishmania, the various forms of the involved parasites, geographical similarities and other similar syndromes, such as typhs, malaria, schistosomiasis, the diagnosis is difficult to establish (7). The diagnosis is confirmed by microscopic identification of the parasite in spleen and liver, bone marrow biopsy, or the detection of DNA from blood or bioptic material with a PCR method. The disease is fatal in 90% of cases, within 1 to 3 years, if the disease is not treated (8). Living or short stays in the endemic area, hepatosplenomegaly, fever and pancytopenia are the guides for this parasitic disease. The diagnosis was made due to biopsy of the bone marrow. The woman was immediately placed on Pentavalent antimonials (Amphotericin B) along with nutritional supplements. Cardiac arrest and brain bleeding were noticed. Unfortunately, the patient died four weeks after being admitted to the Clinic of Infectious Diseases and Febrile Conditions in Skopje. Our patient had probably been infected in the past and external factors such as stress and regular heart therapy were responsible for the reactivation of latent leishmaniasis.

Therefore, this case of visceral leishmaniasis in a 56 year old woman patient with aortic coronary bypass

transplant and Hepatitis C is a very rare presentation that mandates further research on this topic.

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