

Case Report

An Unusual Case of Visceral Leishmaniasis Presenting with Marked Jaundice

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ABSTRACT

Visceral leishmaniasis is usually a fatal disease, if untreated. It is endemic in some areas of Iran. Although the common manifestation includes fever, hepatosplenomegally and cachexia, in rare cases, edema, ascites and icterus are present. An 18-month-old infant from Pars Abad, in the northeast Iran, was admitted to Tabriz Children's Hospital

with fever and icterus. After intensive investigations, the diagnosis of visceral leishmaniasis was made. Complete recovery was achieved with meglumine antimoniate administration. We suggest that any patient coming with fever and icterus from an endemic area should be investigated for visceral leishmaniasis.

KEYWORDS: icter, jaundice, leishmaniasis

INTRODUCTION

Visceral leishmaniasis, if untreated, has a 90% mortality rate^[1]. The etiologic agents are *Leishmania donovani*, *infantum*, *chagasi* and occasionally *tropica*^[2]. In Iran, some areas such as northeast of Azarbaijan, Pars Abad of Ardabil, Chahar Mahal Bakhtiari, Khoozestan and Fars are endemic for leishmaniasis^[3]. The etiologic agent in east Azarbaijan and Ardabil is *L. infantum*^[4]. Leishmania in the form of promastigote is primarily introduced by phlebotomine and then it enters the macrophages, where it transforms to an amastigote, resides in the phagolysosome and replicates^[1]. The parasite is resistant to the acidic, hostile environment of the macrophages and eventually ruptures the cell, infects other macrophages and thus reaches the reticuloendothelial system^[1].

The common clinical and paraclinical findings include high fever, huge hepatosplenomegally, cachexia, anemia and pancytopenia. Bleeding due to thrombocytopenia and secondary infections due to leukopenia are the causes of death^[5]. Very rarely in end stage patients, edema, ascites and icterus are present^[1]. Anemia may be severe and may lead to congestive heart failure.

CASE PRESENTATION

An 18-month old female infant from Pars Abad was admitted to Children's Hospital with a history of progressive jaundice for 10 days. Two months prior to admission she had become febrile and anorexic. There was no family history of jaundice. The vaccination schedule was up to date. She weighed 9 kg, axillary temperature 38.5° C, BP

95/60 mmHg, heart rate 98/min and respiratory rate 39/min. On physical examination she was conscious, with severe icterus, the liver was 4 cm below the costal margin, the spleen was palpable and there was slight ascites. Chest X-ray was normal and sonography of abdomen revealed an enlarged liver with normal echogenicity and moderate ascites. The patient had a liver function test done six days prior to admission and we requested investigations, on the 1st, 6th and 11th day of admission and 20th day of treatment, which are shown in Table 1. Wright, Widal, Coombs' test, blood, urine and stool cultures were negative. Total protein was 7 g/dl with 3.3 g albumin, urinalysis showed 3+ bilirubin. Although twice fresh frozen plasma (FFP) was transfused and vitamin K injection was done in first 3-day of admission, the prothrombin time (PT) and partial thromboplastin time (PTT) were not corrected. Ascitic fluid was found to be transudate with negative culture. Antigenic and serologic tests for viral hepatitis were negative. From 6th to 11th day of admission, one transfusion of packed cell and six transfusion of FFP were administered. However, the PT and PTT were still not corrected. The first bone marrow examination was done on 3rd day of admission and was negative for leishmania parasites. A second bone marrow aspiration which was done on 10th day of admission was reported positive on 15th day. Direct Agglutination test (DAT), was later reported to be highly positive (1/102400). On 15th day of admission treatment with 20 mg/kg meglumine antimoniate was started. On the 8th day of treatment (day 23 of admission) the fever

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Table 1
Hematologic and Liver function tests

Tests	6 day prior to adm ¹	1 st day of adm	6 th day of adm	11 th day of adm	20 th day of therapy ²	Units
Total Bilirubin	12.3	14.5	17.2	24.4	10.8	mg/dl
Diret Bilirubin	7.1	9.1	9.6	11	0.8	mg/dl
Alkaline Phosphatase	307	330	260	320	258	U
SGPT	180	220	220	220	110	U
SGOT200	200	220	195	70	U	
Platelet300000	265000	250000	285000	326000	mm3	
Leukocyte	9100	4700	3800	13500	10800	mm3
Polymorph	32	42	53	48	30	%
Lymphocyte	67	55	45	52	67	%
PT3	18	22	24	20	13	Sec
PTT4	39	40	65	45	32	Sec
Hemoglobin	8	8.1	5.1	12.1	11.5	g/dl
ESR	90	82	88	78	53	mm/hr

1 - Admission 2 - Treatment was started on 15th day of admission
3 - Prothrombine time 4 - Partial thromboplastin time

subsided, the icterus decreased. The patient was later discharged in good condition to continue treatment at home. In OPD follow-up on the 20th day of treatment, she was doing well, had a proper appetite and no fever. The meglumine antimoniate therapy was given for 30 days and the patient was followed up for 20 days after completing the course of treatment.

DISCUSSION

Leishmaniasis is caused by intracellular protozoan parasite of the genus *leishmania*^[5]. The clinical picture depends on the virulence and tropism of the parasite, genetic background, immunity, nutritional status and age of the host^[1]. It could be subclinical or with cutaneous, mucocutaneous and visceral manifestation^[2]. Visceral leishmaniasis rarely presents with icterus, ascites, hepatitis or fulminant hepatitis, which may lead to wrong diagnosis and treatment^[6]. Singh *et al*, in a study done on 150 cases of Kala Azar found that although liver function was disturbed in 17% of the cases, fulminant hepatitis was present in three cases^[7]. The present patient comes from an endemic area for leishmaniasis. She presented with

hepatitis and ascites, she lacked the common findings such as high fever, huge hepatosplenomegally, cachexia, anemia and pancytopenia of leishmaniasis. Though visceral leishmaniasis was considered in differential diagnosis, other causes of icterus such as viral hepatitis, brucellosis, typhoid fever, urinary tract infection and hemolytic anemias were investigated. Finally, the diagnosis of leishmaniasis was established. Eight days after meglumine antimoniate administration, the fever subsided and icterus diminished. The pentavalent antimony compounds sodium stibogluconate (Pentostam) and meglumine antimoniate (Glucantime), administered for 20-30 days, are the mainstay of antileishmanial chemotherapy^[1]. In case of recurrence, the treatment needs to be repeated and for resistant cases, Amphotericin B is recommended^[2]. Therefore, if a patient comes from an endemic area with icterus, hepatitis, high sedimentation rate and pancytopenia, visceral leishmaniasis should be considered in the differential diagnosis and complete investigation should be carried out^[8].

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