

Visceral leishmaniasis – A case report

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Abstract

Visceral leishmaniasis (Kala-azar) caused by *Leishmania donovani* is a common endemic infection in eastern India, Nepal, Bangladesh, Sudan and Brazil. It commonly presents with fever, anemia, weight loss, protuberant abdomen and hepatosplenomegaly. The splenomegaly appears early and the spleen increases in size in relation to the duration of disease so that eventually it may reach the left hypochondrium.

Definitive diagnosis is based on detection of the parasites, or their DNA, in smears of bone marrow, splenic aspirate or fluid aspirated from enlarged lymph node & buffy coat.

Here, we present a case of a 6 year old boy, a native from Nepal, who presented with a history of recurrent fever, abdominal distension associated with loss of appetite for seven months, followed by ecchymosis over body.

Clinical examination revealed pallor, enlarged liver and massive splenomegaly. Investigations confirmed the diagnosis of Kala-azar by the presence of LD bodies in bone marrow smear. The patient was treated by intravenous administration of amphotericin-B and he responded favorably to treatment.

KEYWORDS: Abdominal distention, fever, massive splenomegaly, LD bodies.

Introduction

Visceral leishmaniasis (Kala-azar) is endemic in 62 countries, 90% of estimated 5 lakh new cases which occur annually are confined to the rural areas of India, Nepal, Bangladesh, Sudan and Brazil.¹ Although leishmaniasis is widely prevalent in the eastern states of India namely Bihar, Jharkhand, Uttar Pradesh and West Bengal, diagnosing the illness is still difficult.²

Kala-azar is a chronic infection of reticuloendothelial system caused by flagellated protozoan, *Leishmania donovani* injected into human host by the bite of the phlebotomous sandfly.³ Incubation period of Kala-azar ranges between 1 to 4 months.⁴ It commonly causes severe systemic disease marked by hepatosplenomegaly, lymphadenopathy, pancytopenia, persistent fever and weight loss.⁵

The commonly used method for diagnosing visceral leishmaniasis has been the demonstration of parasites in splenic or bone marrow aspirate. The presence of the parasite in lymph nodes, liver biopsy, or aspirate specimens or the buffy coat of peripheral blood can also be demonstrated. The rK39 Strip test has the potential to be used for diagnosis of visceral leishmaniasis under field conditions.⁶ Kala-azar is the most severe form of leishmaniasis.⁷

Pentavalent antimony compound like Sodium stibogluconate and intravenous Amphotericin B are drug of choice with good prognosis. However it can be fatal in the absence of treatment.³

Case Report

- A 6 year old boy, residing in Nepal was admitted to our hospital with complaints of Fever-on & off and decreased appetite since 7 months
Abdominal distension, Pedal edema, Failure to thrive since 5 months
- General examination - Cachexic, Severe pallor +, Bilateral pedal edema-pitting, Ecchymotic patches over trunk, PR- 110/min
Temperature- 101°F
- Systemic Examination –
Per abdomen - Abdominal distension, Liver-palpable 6cm below costal margin, Spleen- firm, palpable 9cm below costal margin
Ecchymotic patches + over the Abdomen.
No specific any other finding.

Investigations

HEMATOLOGICAL INVESTIGATIONS

CBC - on admission:

Hb- 4.8gm%

TLC- 2000/cmm DLC- P₂₈ L₆₈ E₂ M₂B₀

Plt - 70,000/cmm

PBS: Normocytic normochromic RBCs, anisocytosis 3+, hypochromic 1+, Pancytopenia

Bone Marrow Examination - Hypercellular bone marrow with erythroid hyperplasia. Show abundance of amastigote forms of Leishmania Donovanii (L D Bodies).

BT- 4 min, CT- 8 min, PT- 14 sec, Malarial parasite –negative

Blood urea- 30 mg/dl, Sr. creatinine- 0.8 mg/dl, Sr. LDH -275 IU/ L

Widal Test- Negative, Mantoux Test- Negative, HIV ELISA – Negative

USG Abdomen – Mild Hepatomegaly

Massive Splenomegaly

So Final Diagnosis:- **Visceral Leishmaniasis (Kala-azar)**

Treatment: Sodium stibogluconate 20mg/kg/day for 28 days

Amphotericin B 1mg/kg/day on alternate day for 28 days

Supportive care given by hematinic, platelet transfusion & antibiotics

Patients GC improved after 10 days, appetite improved, edema decreased & he started moving. Platelet count & hepatosplenomegaly normalize over 1 month.

Discussion

Kala-azar is a tropical infectious disease of reticuloendothelial system caused by amastigote form of *Leishmania donovani*.³

Kala-azar is endemic in 52 districts in Bihar (31), Jharkhand (4),

West Bengal (11) and Uttar Pradesh (6).⁴ It is prevalent in southern plains of eastern and central regions of Nepal especially in 13 districts bordering with Bihar.³ Peak age of incidence is 5 to 9 years and more common in males and low socio-economic strata in rural areas.⁴ Our patient is also 6 year old male in low socio-economic strata from rural areas of Nepal.

Life cycle of leishmaniasis is completed in two hosts an amastigote form (L DBodies) in vertebrate and flagellated promastigote in insects. Promastigote forms in pharynx of sandfly are then injected into a new host by its bite. Parasite then assumes amastigote form and engulfed by macrophages which are then carried by blood stream to distant organs like spleen, liver, bone marrow. There they cause marked hyperplasia of reticuloendothelial system.⁴

Kala-azar is characterized by prolonged fever, splenomegaly, hepatomegaly, substantial weight loss, progressive anemia, pancytopenia and hypergammaglobulinemia.⁶ Our patient is also having similar presentation of prolong fever, weight loss, hepatosplenomegaly, pancytopenia, anemia and pedal edema.

Parasites can be demonstrated in splenic puncture in about 95% cases, bone marrow in up to 86% cases and in liver aspirates and in Buffy coat preparations in about 70% cases. They can either be seen insmear or cultured in NNN medium. The rK39 Strip test is also available in endemic region to be used for diagnosis of visceral leishmaniasis under field conditions.³ In our patient visceral leishmaniasis is mainly diagnosed on clinical presentation and bone marrow aspirate smears showing amastigote forms of *Leishmania donovani* (LD Bodies).

Visceral leishmaniasis is treated with Sodium stibogluconate (SSG) im / iv 20mg/kg/day for 28 days and miltefosine 100 mg daily for 28 days in an area where sensitivity of SSG is > 90%. In areas with sensitivity < 90% it is treated with Amphotericin B 1mg/kg iv infusion daily or alternate day.² Our patient is also treated

with Sodium stibogluconate and Amphotericin B along with supportive care with antibiotic and platelet transfusion and he showed clinical improvement with treatment as spleen regressed, anemia and pancytopenia disappeared and general condition improved.

Conclusion

- ⦿ This case is being reported not because it is of visceral leishmaniasis but because it is case of visceral leishmaniasis in a patient from endemic zone (Nepal) diagnosed in non-endemic region.
- ⦿ Therefore visceral leishmaniasis should be considered in any patient presenting with long duration of fever and hepatosplenomegaly with pancytopenia whether or not from an endemic area for Kala-azar.
- ⦿ Demonstration of parasite is a must to begin treatment and is completely treatable disease when diagnosed correctly.

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Fig.1- Clinical photograph showing abdominal distension & ecchymotic patches

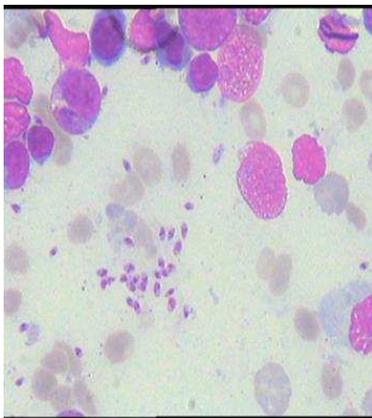


Fig 2-Bone marrow aspirate showing extracellular L.D bodies

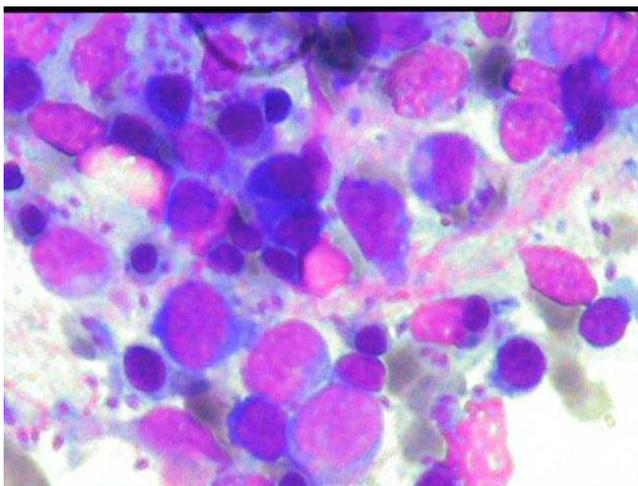


Fig.3-Bone marrow aspirate showing intracellular and extracellular L. D Bodies