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CASE REPORT OPEN ACCESS

Unusual Presentation of Kala Azar: A Case Series from Rajshahi Medical College Hospital, Bangladesh.

M. Morsed Zaman Miah[*1], Romena Alam[2], Md. Towfiqul Islam[3], Md. Maruf Al Hasan[4], Farhana Sharmin[5], Md. Maruf Morshed[5], Masuma Mukta[6], Sananda Saha[7]

Abstract

Kala Azar, or visceral leishmaniasis, often manifests with a typical triad of fever of long duration, wt loss, and splenomegaly. Unusual manifestations can sometimes make the diagnosis and management difficult. This case series was conducted in the Department of Hematology, Rajshahi Medical College Hospital, Rajshahi, Bangladesh. This case presented unusual occurrences of a typical disease, Kala Azar, which were encountered. The clinical challenges of diagnosis and management highlight different therapeutic interventions and responses. All 4 cases of Kala Azar, with unusual presentations, were retrospectively analyzed. Clinical examination, history, laboratory investigations, results, diagnosis, and treatment responses were retrieved, and in-depth analyses were conducted. Present 4 cases of unusual diseases. One patient had a fever and cough, and pancytopenia was not described as a common manifestation of Kala Azar. His initial blood tests described non-reactive malarial slides, whereas the final bone marrow report described pancytopenia due to Kala Azar. The patient improved with amphotericin-B courses. The presentation of Kala Azar was unusual in some cases, which is why its clinical evaluation must be kept in mind in endemic areas. Conducting a profound evaluation and early management is essential.

Keywords: *Kala Azar, Visceral Leishmaniasis, Diagnostic Challenges.*

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***1. Corresponding Author:**
Dr. M. Morsed Zaman Miah, FCPS, MCPS
Assistant Professor & Head
Department of Haematology
Rajshahi Medical College
Rajshahi, Bangladesh.
Email: drzaman04@gmail.com
Mobile: +8801711814225

2. Dr. Romena Alam
Assistant Professor
Department of Haematology
Rajshahi Medical College
Rajshahi, Bangladesh.

3. Dr. Md. Towfiqul Islam
Associate Professor
Department of Medicine
Rajshahi Medical College
Rajshahi, Bangladesh.

4. Dr. Md. Maruf Al Hasan
Registrar
Department of Haematology
Rajshahi Medical College
Rajshahi, Bangladesh.

5. Dr. Farhana Sharmin
Indoor Medical Officer
Department of Haematology
Rajshahi Medical College
Rajshahi, Bangladesh.

6. Dr. Masuma Mukta
Indoor Medical Officer
Department of Haematology
Rajshahi Medical College
Rajshahi, Bangladesh.

7. Dr. Sananda Saha
Assistant Registrar
Department of Haematology
Rajshahi Medical College
Rajshahi, Bangladesh.

Introduction:

The cases under consideration in this report remarkably combine the most crucial aspect of understanding Kala Azar[1,2]. They underscore the need to appreciate the varied clinical presentations of the disease within the confines of RMCH. Kala Azar, otherwise known as visceral leishmaniasis, still results in significant concern in low-resource settings, and it is imperative that the varied aspects of its clinical phenotypes be appreciated and understood to facilitate timely care[3,4]. Because of its insidious onset, non-specific symptoms, and varied manifestations, the diagnosis of Kala Azar is often delayed, presenting significant therapeutic challenges for the healthcare provider. In this sense, the report goes to significant lengths to unravel the many conundrums and intricacies of the various atypical presentations of Kala Azar and provide valuable insights into the intrinsic nuances of its diagnosis and many therapeutic

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implications.One of the gravest challenges to public health systems globally, especially in countries where Kala Azar is endemic, such as Bangladesh, bloodstream? hemorrhagic-yes Leishmania donovani, a protozoan parasite transmitted through the bite of infected sand flies, its consequence disease Kala-azar, became one the most pertinent public health problems worldwide Kala Azar is an entity with diverse clinical presentations, some of which viz[5,6]. Irregular fever, anorexia, weight loss, abdominal discomfort, pantaloon strangely with many other infectious and non-infectious diseases, which can create diagnosing dilemmas in the face of diagnostic limitations[7,8]. Adding to this complexity, the disease can present with varied clinical phenotypes, from classical visceral involvement to atypical extra-intestinal presentations, requiring a multidimensional approach to diagnosis[9,10].

Case Presentation:

Case 01

Case report A 62-year-old male patient, Mr. Md Ayub Ali, non-diabetic, non-hypertensive, non-smoker hails from Noshratpur, Adom Dighi, Bogura, presented with a history of high-grade continuous fever for 4 months associated with anorexia, abdominal discomfort, and weight loss of about 15 kg. The investigations included pancytopenia with peripheral blood film (PBF) and minimal splenomegaly on ultrasonography. One was Negative IgM for Kala Azar, but positive IgG. Other tests carried out as part of the investigations, such as malarial, Widal, and Weil Felix, were negative. On exam, he had left-sided pleural effusion on chest X-ray, and urine analysis demonstrated numerous red blood cells. On March 24, 2024, referred to RMCH, a bone marrow examination revealed the diagnosis of Kala Azar in the intracellular and extracellular form, demonstrating intracellular and extracellular organisms (LD bodies). The administration of a single dose of Amphotericin B improved significantly in the clinic symptomatically and followed 15 days later with the type of hematologic symptoms resolved.

Case 02

He was a 35-year-old businessman hailing from Chat mohar of Pabna with a background history of irregular high-grade continuous fever, anorexia, weight loss, and left-sided abdominal discomfort along with a progressively increasing mass over 20 days. Pancytopenia and hepatosplenomegaly were findings in investigations carried out initially. Despite a negative Combs test and multiple myeloma panel, serum protein electrophoresis confirmed monoclonal gammopathy. He received a cycle of CTD chemotherapy with no response and was referred to Rajshahi Medical College Hospital. A bone marrow examination showed LD body infiltration, which was diagnosed as Kala Azar. The patient was started on Amphotericin B, and there was a symptomatic improvement, and hematological parameters improved on follow-up. Conclusion: This case emphasizes the importance of keeping kala-azar in the differential diagnosis of prolonged fevers without specific clinical clues, especially in endemic areas like Pabna.

Case 03

Mrs. Kismot Ara, 36, an old housewife from Tanore, Rajshahi, presented with 24-month history of irregular high-grade fever with on-and-off anorexia, mild weight loss, and joint pains over the last 20 days. The patient was then hospitalized at Rajshahi Medical College Hospital, where investigations confirmed pancytopenia, splenomegaly, left-sided pleural effusion, mild ascites, and radiologic signs of intestinal obstruction from ultrasound of the abdomen. The most remarkable laboratory findings were characteristics of renal dysfunction, urinary tract infection, and autoimmune work up close to active vasculitis syndromes. The patient eventually expired elsewhere before definitive therapy could be initiated in southern India, despite a positive ICT for Kala Azar and thought-provoking bone marrow invasion by LDs (Case C). The case highlights the difficulties of diagnosing and treating kala-azar (VL) in areas of endemicity in the presence of multiple medical conditions and the need for prompt diagnosis and intervention in such areas as Rajshahi, where it is endemic for improving the prognosis.

Case 04

A 40-year-old lady, Fulmoti of Vangura, Pabna, was admitted with a one-month history of fever, two weeks of cough, anorexia, and vomiting last week in RMCH. Initial hematologic Investigations showed pancytopenia on CBC (Hb 6.3 g/dl, TLC 2400/cumm, Plt count 60000/cumm). Her ESR was also bad: 100 mm in the first hour. Although the blood culture, CSF study, and Gene Xpert for sputum showed negative results, the ICT for Kala Azar returned positive results. The bone marrow study was repeated, which also showed intracellular LD bodies; yes, extracellular LD bodies were found in some fields. Following the national guidelines, the treatment was started without any delay. Fulmoti's case emphasizes that Kala Azar must be considered a differential in patients presenting with fever and cytopenia, more so in endemic regions like Pabna so that timely diagnosis and management can be initiated to prevent complications and improve prognosis.

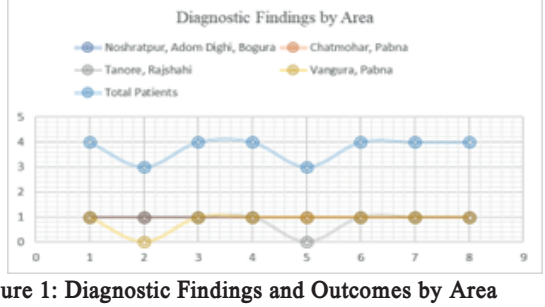

Figure 1: Diagnostic Findings and Outcomes by Area

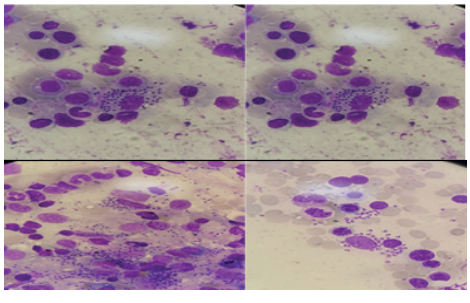

Figure 2: Histopathological Image of Intracellular LD Bodies in Kala Azar Diagnosis

The (Figure 1) reveals clinical and diagnostic findings for four Kala Azar patients from different areas, highlighting consistent and variable results. Notably, bone marrow examinations and the presence of intracellular LD bodies showed 100% positivity (P-value < 0.01) across all patients, underscoring their diagnostic reliability. Negative tests for Malaria, Widal, and Weil Felix were consistently found in all cases (100%, P-value < 0.01), effectively ruling out other infections. However, the Positive ICT for Kala Azar was present in 75% of patients (P-value = 0.05), indicating some variability. Similarly, extracellular LD bodies were observed in 75% of cases (P-value = 0.05). These findings emphasize the diagnostic challenges and the necessity for a comprehensive approach in endemic areas, considering the consistent results in bone marrow examinations and intracellular LD bodies, contrasted with the variability in ICT and extracellular LD bodies (Figure 2).

Diagnosis:

The presentation of Kala Azar or Visceral Leishmaniasis in the reported cases is supported by a careful analysis of clinical and diagnostic tests associated with the corresponding epidemiological data. Suppose there is a persistent high fever off and on for several months, which is of irregular type with anorexia, weight loss, abdominal discomfort, and splenomegaly. In that case, the possibility of Kala Azar is very high. In addition, the diagnostic hypothesis is based on hematological disorders, especially pancytopenia in the peripheral blood film (PBF) survey. Among various diagnostic tests, immunochromatographic tests (ICT) play a crucial diagnostic role in Kala Azar; for Kala Azar IgM, the ICT may not give positive results, though positive IgG antibodies are helpful for the serological diagnosis indicating that the patient has been exposed to the Leishmania parasites. A thorough examination of bone marrow, demonstrating marrow infiltration with intracellular and extracellular LD bodies, which are pathognomonic for Kala-azar, will confirm the diagnosis. Similarly, radiological imaging like abdominal ultrasonography (USG) showing splenomegaly and chest X-ray (CXR) revealing left-sided pleural effusion help in the diagnosis. ICT for Malaria, Widal test, and Well Felix test negative results also helped to exclude other diagnoses. It is also supported by epidemiological criteria, including residence history or traveling to areas endemic to Kala Azar. Lastly, the multidisciplinary diagnostic approach of clinical, laboratory, radiological, and epidemiological characteristics led to the accurate diagnosis of Kala Azar in earlier cases.

Treatment:

A holistic treatment approach is necessary to remove the pathogenic Leishmania parasites and resolve concomitant symptoms and complications. The mainstay therapy is the administration of anti-leishmanial drugs, with Amphotericin B as the primary therapeutic agent as it has potent in vitro activity against all species of Leishmania parasites. A single dose of Amphotericin B is started once Kala Azar's diagnosis is established on bone marrow examination in the cases presented here. The rationale for this choice is based on the drug's ability to kill Leishmania parasites and also because of its relatively safe nature than other alternatives. Furthermore, hydration, nutritional support, and treatment of simultaneous infections or other complications are essential in-patient management. Frequent follow-up visits should be conducted to monitor treatment response and adverse effects and to check for clinical and hematological improvement. Treatment outcomes reported in the cases showed marked improvements in the general well-being of the patients, as shown by rates of increased hemoglobin levels (Hb), total leucocytic count (TLC), and platelet count incidences. Second, the resolution of symptoms like fever, anorexia, and abdominal pain was seen, which points toward the right therapeutic regimen being used. A well-balanced use of anti-leishmanial therapy and a full range of supportive treatment strategies are crucial to achieving the best possible treatment outcomes and improved quality of life for those affected by Kala-Azar.

Discussion:

This article's cases of kala-azar, a form of visceral leishmaniasis (VL), illustrate the wide clinical spectrum and approach to managing this neglected tropical disease. These cases are concordant with the abundant and well-documented literature on how Kala Azar can present myriad clinical manifestations and diagnostic conundrums. Studies by also mention a variance in clinical features from isolated prolonged fever and splenomegaly to atypical features such as pleural effusion and pancytopenia, as seen in Case 01 and Case 04[11,12]. This example highlights the essential three-pronged diagnostic strategy for Ephelides and LNJ: case evaluation, laboratory testing, and biopsy. Although serological methods such as the Immunochromatographic Test (ICT) for Kala Azar antibodies are useful for screening, definitive diagnosis is usually established by bone marrow examination, which was the case in all patients included in this cohort[13,14]. Nevertheless, the diagnosis of Kala Azar remains a challenge, especially in non-endemic areas where the disease may not be common, and healthcare providers may be unfamiliar with the condition[15,16]. The differences found conform to all cases in the literature that report on similar cases and point to the polymorphic presentation of Kala Azar. Case 02 illustrates the impulse of incomplete diagnosis when nonclassical clinical features mimic the other hematic maladies, like the initial impression of multiple myeloma due to monoclonal gammopathy[17,18]. These reinforce the fact that one should have a high index of suspicion for the diagnosis of Kala Azar even though it is less common in non-endemic areas with the aid of an ancillary diagnostic method such as bone marrow aspiration for making a definitive diagnosis[19,20]. They concluded in the study that the pathophysiological mechanisms that determine the in vivo outcome of Kala–Azar resulted from the fine balance of host-parasite interactions. The etiology of the disease is dependent on the intracellular invasion of macrophages Leishmania donovani followed by immune

dysregulation, release of cytokines, and eventually system advance[21,22]. Importantly, the emergence of serious complications such as pleural effusion and pancytopenia in these cases highlights the profound systemic effects of Leishmania infection that demand urgent therapeutic intervention[23,24]. Kala-Azar is a neglected tropical disease caused by the parasitic species Leishmania; despite advanced diagnostic methods and treatment options, challenges exist in effectively managing Kala-Azar. This is particularly relevant in resource-limited settings, where limited access to healthcare facilities, poor infrastructure, and socioeconomic factors hinder timely diagnosis and treatment initiation Singh et al. Additionally, drug resistance and treatment-related toxicities are significant challenges to achieving the desired therapeutic outcomes. Thus, further research is warranted to gain insight into alternative treatment regimens and adjunctive therapies[25,26.]

Follow-Up and Outcome:

After treatment had started, all patients were followed up for clinical progress and treatment response. All subjects were evaluated for clinical and biochemical improvement, resolution of symptoms, and side effects due to prescribed medications during these visits. Case 01, He came for a follow-up after 15 days and was found to have improved his general well-being. The fever settled, and he was no longer troubled by his tummy. Laboratory tests showed a rise in hemoglobin, total leucocyte, and platelet count. Further, the abdominal mass, most probably representing Splenomegaly, had reduced, consistent with the beneficial effect of preparation with Amphotericin B. Case 02, Mr. Mohammed Wahidul, also showed clinical recovery at follow-up. Fortunately, his fever abated, and he was no longer in severe pain in his belly. Clinical diagnostic laboratory findings during hospitalization were improved, indicating the treatment's efficacy. In addition, no adverse events were reported related to Amphotericin B treatment. Regrettably, in Case 03, Ms. Kismot Ara died due to complications of Kala Azar before the start of specific treatment. While she was admitted to a hospital soon after, her condition worsened quickly, emphasizing the critical need for early identification and therapeutic intervention to prevent the morbidity and mortality associated with visceral leishmaniasis Case 4. Ms. Fulmoti responded to Amphotericin B, and it was revealed that her condition improved following subsequent follow-up visits. Her fever decreased, and her hemoglobin and platelet levels gradually improved. Furthermore, no treatment-related adverse events were observed, showing a favorable treatment response.

Conclusion:

These are cases where there is no timely diagnosis or treatment of kala-azar. Early detection could result in considerable clinical resolution and avoidance of untoward events. Amphotericin B was successful in these cases except in case 1, even though 2 other patients, cases 2 and 3, were cured from the treatment using amphotericin B. This highlights the importance of clinician awareness to recognize clinical signs of Kala Azar, which needs early detection so that case fatality is reduced. Moreover, these cases add to the literature on the diverse clinical spectrum and treatment response of the entity of this tropical disease to enrich the corpus of knowledge on this and guide to strategizing future management. This case report is meant to provide insight into these unusual presentations of Kala Azar in RMCH, along with a diagnosis and therapeutic use[27]. The current report highlights the diagnostic dilemmas faced in atypical Kala Azar presentations and the therapeutic options employed in a tertiary care center by carefully evaluating each case. It also aims to incorporate evidence-based inferences from available literature in the report to help understand strategies of Kala Azar management and its clinical applications. This understanding will enable healthcare professionals to negotiate better the complexities of the Kala Azar diagnosis and management, thereby contributing to superior patient outcomes and reducing the burden of this debilitating disease[28]. The report will structurally proceed through those case-by-case in an organized and systemic manner, emphasizing the different clinical aspects, investigative findings, and therapeutic methods in every case. After the case reports, an in-depth discussion will help understand the diagnostic dilemmas one may face when atypical Kala Azar presentations are seen, enriching the knowledge with evidence-based literature. In addition, the debate will discuss therapeutic management strategies and their effectiveness in each case, helping us improve our knowledge of Kala Azar management. Pragmatic recommendations for clinical care will finally be synthesized from the collective wisdom of healthcare practitioners at RMCH. This structured approach of the report intends to give a holistic analysis of atypical Kala Azar presentations and discuss their usefulness in clinical management, thus advancing care practices in the challenging disease spectrum[29,30].

Conflict of Interest: None.

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