



Cutaneous Leishmaniasis: A Case Report from Eastern part of Indian Subcontinent

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Abstract:

Cutaneous Leishmaniasis is rare in eastern part of Indian subcontinent, although visceral leishmaniasis is common in this region. It has been mainly reported in north-western part (Rajasthan and adjoining areas) of this region. Here in we report a case of cutaneous leishmaniasis who presented in the outpatient department of All India Institute of Medical Sciences, Patna.

Key words: Cutaneous Leishmaniasis, Visceral Leishmaniasis, Phelobotomus, Protozoan Infections.

Introduction

Cutaneous leishmaniasis is a protozoan infection caused by several species of genus *Leishmania*. The disease is transmitted by the bite of sandfly usually at night and outdoors. Localised inflammatory response to the parasite constitutes the skin lesions [1]. *L. tropica*, *L. major*, *L. aethiopia* species are responsible for old world leishmaniasis. The ten countries with the highest estimated case counts, Afghanistan, Algeria, Colombia, Brazil, Iran, Syria, Ethiopia, North Sudan, Costa Rica and Peru, together account for 70%-75% of global estimated CL incidence [2]. In India, cutaneous leishmaniasis cases are mainly confined to some pockets of Thar desert of Rajasthan, Punjab, Himachal Pradesh, and Kerala [3-6]. Though visceral leishmaniasis (kala-azar) is quite common in Bihar and Nepal, very few cases of cutaneous leishmaniasis has been reported from this region of the subcontinent [7-9].

Case Report

A thirty two year male patient, resident of Nepal presented with complain of erythematous swelling with ulceration over face for 8 months. He complained of difficulty in eating and speaking due to lip involvement and mild itchiness over the lesion. Patient was resident of Nepal, labourer by occupation and was residing in Bihar for last 3 months to seek treatment for the disease. On examination, 2 discrete lesions were present on the face [Fig.1]. One erythematous indurated crusted lesion with central ulceration measuring 8×6 cm was present near the left angle of mouth involving both upper and lower lips on that side. The lesion started as small papule that gradually increased to this size. Another lesion measuring 3 cm in diameter was present below the left eye. Eye examination did not reveal any abnormality. Examination of draining lymph nodes of head and neck was

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normal. Systemic examination of the patient did not reveal any abnormality. The laboratory investigations (hemogram, renal function tests, liver function tests, lipid profile, blood sugar) were all in normal limits. ELISA for HIV and Mantoux test were negative. X ray of skull was normal and didn't show any involvement of bony structure. Chest X ray was also normal. Fungal culture was negative and no growth was seen in tissue culture for *Mycobacterium* after six weeks of inoculation. Examination of ear, nose and throat did not reveal any involvement of these areas. Skin punch biopsy of the lesion was performed and was sent for histopathological examination with a differential diagnosis of cutaneous leishmaniasis, sarcoidosis and cutaneous tuberculosis. Histopathological report confirmed the diagnosis of cutaneous leishmaniasis. Serial section studies showed epithelioid cell granuloma containing lymphocytes, and plasma cells. Small oval organisms with bar shaped paranuclear kinetoplast (amastigote form of leishmania) were noted, lying mostly extracellular. Occasionally macrophages were seen containing similar organisms. He was advised for intralesional sodium stibogluconate therapy on alternate days for the disease. Unfortunately the patient was lost to follow up.

Discussion

Leishmaniasis, an ancient disease was named after W.B. Leishman who identified organisms in smears taken from the spleen of a patient who died from dum-dum fever in 1901 [10]. *Leishmania* are dimorphic parasites. In the gut of sandfly or in culture they exist in promastigote form (10 to 20 μ m, spindle-shaped and motile with a single flagellum). In the cells of the host reticuloendothelial system, leishmania exist in amastigote form (2-6 μ m, round/oval, nonmotile with a rod shaped kinetoplast) [11]. Humans are incidental host, whereas in nature the infection is a zoonosis. The disease is transmitted by the bites of female sandflies of the genus *Phlebotomus* in the Old



Fig.1: Two discrete lesions on face.

World and *Lutzomyia* in the New World. More than 20 species of *Leishmania*, pathogenic for humans and other mammals, have been identified worldwide. Sandflies are proven vectors; the usual reservoir hosts include humans and domestic/wild animals. The definitive diagnosis depends on demonstration of the parasites by smears, culture, PCR, and histological examination of suspected specimens [12]. Clinical manifestations are largely dependent on the parasite species and host's immune response. Leishmaniasis in man may present in three main forms. In the cutaneous form, erythematous papules initially form at the site of sandfly bite which enlarges over few weeks to form nodules, and plaques that often ulcerate and become crusted. The mucocutaneous form results when the parasites metastasize from the skin to produce lesions of the oropharynx. Visceral form (kala-azar) is a systemic reticuloendothelial disease characterized by fever, wasting, hepatosplenomegaly, and leukopenia [13].

The incubation period in cutaneous leishmaniasis usually ranges from a few days to over a year. In our case, the patient didn't recall any history of sandfly bite. The differential diagnosis is extensive and includes infective granulomas,

such as deep fungal infections, lupus vulgaris, mycobacterium infections, leprosy, sarcoidosis, and squamous cell carcinoma. A high index of suspicion is required for diagnosis in non-endemic areas [14]. Early detection of the infection is essential in order to start correct therapeutic modality and to avoid inadvertent use of drugs. In our case, diagnosis was delayed for 6 months due to lack of suspicion by other clinician as leishmaniasis is not common in this area. Multiple treatment options are used across the world for cutaneous leishmaniasis. Besides oral and parenteral medications (pentavalent antimonials, liposomal amphotericin B, miltefosine) local cryotherapy, intralesional infiltration of sodium stibogluconate, local heat therapy, and various topical paromomycin preparations are in practice for many years. Antimonials are used as first-line drug in the treatment of cutaneous leishmaniasis. [14]. Lesions can also be treated by local excision, curettage or by electro-dessication but are probably associated with a higher risk of relapse [15].

Conclusion

This case is being reported because of rarity of the infection in Eastern Indian subcontinent and to emphasizes the point that, when assessing lesions of possible infective aetiology, cutaneous leishmaniasis should also be considered, so that right diagnosis can be done at earliest and correct therapeutic modality be initiated.

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