

## Cytodiagnosis of cutaneous leishmaniasis- a case report

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### ABSTRACT

Leishmaniasis is endemic in many countries in tropical and subtropical regions. The diagnosis of cutaneous leishmaniasis on fine needle aspirates is unusual. Here, we report a case from non-endemic area of Rajasthan, in which aspiration cytology revealed presence of numerous amastigote forms (LT bodies) of leishmania, and helped in diagnosis of cutaneous leishmaniasis.

**Keywords:** Cutaneous leishmaniasis, Leishmania tropica, Fine needle aspiration cytology, Leishmania tropica (LT) bodies

### Introduction

Leishmaniasis is endemic in many countries including Africa, Central and South Americas, Asia and the Mediterranean region. In India, it is endemic in 52 districts in Bihar, Jharkhand, West Bengal and Uttar Pradesh. Leishmaniasis can be divided into cutaneous, mucocutaneous and visceral clinical categories [1].

Cutaneous leishmaniasis is characterized by localized skin lesions, which can become chronic with disfiguring scars [2]. It is mainly endemic in the western part (Thar desert) of Rajasthan. Here, we report a case from the southern part (Udaipur district) of Rajasthan, of a 17 year old male who presented with an ulcerative nodule over lower face and a submental swelling. Fine needle aspiration cytology (FNAC) led to the final diagnosis of cutaneous leishmaniasis.

### Case report

A 17- year old male patient presented in the cytology department with an ulcerative nodule over left side lower face ( Figure-1) and another swelling in the submental region for last 15 days.

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There were no systemic complaints and family history was non-significant.

The haemogram revealed a mild decrease in total leukocyte count and other parameters were within normal limits.

On examination, an ulcerative nodule was presented over left side lower face, near angle of mouth partially covered by scaly scab. It measured about 1x1 cm in size, was firm in consistency, non-tender and fixed to skin. The swelling in the submental region measured 2x1.5 cm and was firm in consistency, non-tender and mobile.

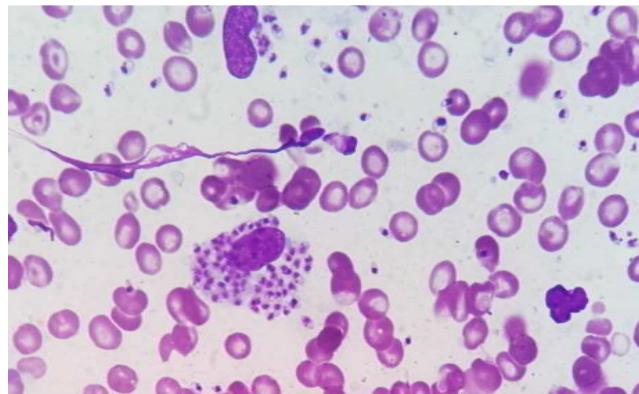
Peripheral blood film, otherwise normal, revealed a slight decrease in total leukocyte count. The patient referred no travels and had received several topical treatments which failed. FNAC was performed from both the lesions.

Smears from the ulcerative nodule showed presence of many amastigotes (LT bodies) inside the macrophages as well as dispersed extracellularly amongst other inflammatory cells (Figure-2). Smears from the submental swelling revealed non-caseating epithelioid granulomas, groups of histiocytes with few of them showing intracellular amastigotes (LT bodies) against a background comprising of lymphoreticular cells and lymphoid globules (Figure-3 and Figure-4).

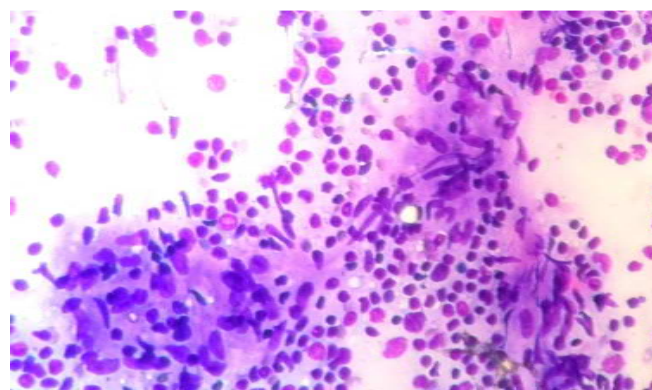
A diagnosis of cutaneous leishmaniasis with chronic granulomatous lymphadenitis was made. The patient was treated with intralesional sodium stibogluconate to which he responded well.



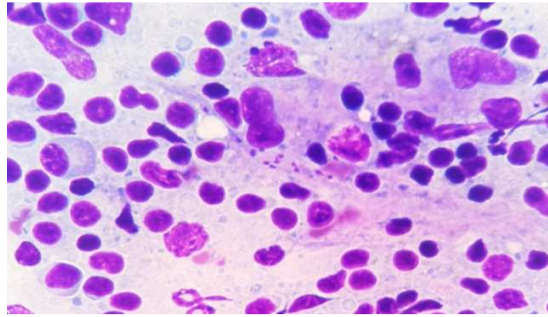
**Figure 1: Ulcerative nodule with scaly scab**



**Figure 2: Cytosmear from the ulcerative nodule showing intracellular and extracellular LT bodies (MGG, X1000)**



**Figure 3: Cytosmear from the submental swelling showing non caseating epithelioid granulomas (MGG, X400)**



**Figure 4: Cytosmear from submental swelling showing LT bodies in histiocyte against a background of lymphoreticular cells and lymphoid globules (MGG, X1000)**

### Discussion

Cutaneous leishmaniasis is a vector borne disease caused by various species of the obligate intracellular protozoa, *Leishmania* [3]. It can be divided into Old World and New World forms. The old world forms are caused by *L. major*, *L. tropica* and *L. aethiopica*, and the species of ***L. braziliensis*** and ***L. Mexicana*** are responsible for the new world forms [4]. The geographic range of this zoonotic disease is limited by a sandfly vector belonging to genus *phlebotomus* or *lutzomyia* [5]. Udaipur region of Rajasthan hitherto in not a known endemic area for cutaneous leishmaniasis. We rarely encounter cases of cutaneous leishmaniasis in routine clinical practice. Moreover, diagnosis on FNA smears is even rarer. The lesion starts as a papule and grows into a nodule that ulcerates over some weeks or months. Lymphatic spread and lymph node involvement may be palpable and may precede the appearance of skin lesion [4]. Other disorders mimicking cutaneous leishmaniasis include traumatic ulcerative lesions, foreign body reactions, infected insect bites, impetigo, fungal and mycobacterial infections, sarcoidosis and neoplasms [6]. The diagnosis of cutaneous leishmaniasis can be made by demonstration of amastigotes in cutaneous scrapings, punch biopsy and culture of the aspirates. Immunological assays using PCR is also useful [7]. The disease responds well to antimonials as was seen in our case. In our opinion the FNAC is an easy, effective and useful diagnostic tool in the diagnosis of cutaneous leishmaniasis and would lead to timely initiation of appropriate therapy as in our case.

### References

1. K Park: Textbook of preventive and social medicine. M/S Banarasidas Bhanot publishers, Jabalpur, Edition 21, 2011: 279-282.
2. Roger Adrian Figueroa, Leyder Elena Lozano, Ibeth Cristina Romero, Maria Teresa Cardona, Martin Prager, Robinson Pacheco, Yira Rosalba Diaz, Jair Alexander Tellez and Nancy Gore Saravia. Detection of *Leishmania* in unaffected mucosal tissues of patients with cutaneous leishmaniasis caused by *Leishmania* (*Viannia*) species. *J Infect Dis* 2009; 200(4): 638-646
3. Anuradha Sharma, Ancha Gulati, Rajini Kaushik. Cutaneous Leishmaniasis Presenting as a Submandibular Nodule – A Case Report. *J Cytol* 2007; 24 (3): 149-15
4. Shyam Sundar: Harrison's principles of Internal Medicine. McGraw-Hill publishers, New Delhi, Edition 18, 2012: 1709-1716
5. Nand Lal Sharma, Vikram K. Mahajan, Anil Kanga, Anuradha Sood, Vishwa M. Katoch, Isabel Mauricio, Chauhan D.Singh, Uttam C. Parwan, Vijay K. Sharma and Ramesh C. Sharma. Localized cutaneous leishmaniasis due to *L. donovani* and *L. tropica*: preliminary findings of the study of 161 new cases from a new endemic focus in Himachal Pradesh, India. *Am J Trop Med Hyg* 2005; 72: 819-824
6. Roberta Zappacosta, Roberta Claudi, Salvatore Magnasco and Emma Dell'Osa. *Leishmania* life cycle images in the cutaneous cytologic smear of an immunocompetent patient. *J Cytol* 2010; 27(1): 35-36
7. William H. Markle and Khaldoun Makhoul. Cutaneous Leishmaniasis: Recognition and Treatment. *Am Fam Physician* 2004; 69(6):1455-1460.

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