

# Cutaneous leishmaniasis in Nepal: an emerging public health concern

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## ABSTRACT

Cutaneous leishmaniasis, a vector borne protozoan infection of skin manifests as chronic nodulo-ulcerative growth in skin. In Nepal, cutaneous leishmaniasis, the most common form, supposed to be rare is gradually rising as an emerging public health concern. These days, a number of imported and native patients are being reported from different parts of Nepal. Since, it's less endemic here; there is high chance of being treated as other diseases. Here, we report a series of cases of cutaneous leishmaniasis, who presented in the outpatient department of dermatology, TU Teaching Hospital in the year 2015-2016 and was treated with miltefosine.

**Key words:** Cutaneous leishmaniasis; Miltefosine; Nepal; Public health

## INTRODUCTION

Cutaneous leishmaniasis (CL) is vector borne parasitic infection. A 'classical' lesion starts as a papule or nodule at the site of inoculation. CL is caused by different species of *Leishmania* but *L. major* is the common reported cause in Nepal [1,2]. It is transmitted by a bite of infected female sandfly of the genus *phlebotomus* in the old world and the genus *Lutzomyia* in the new world. The disease is prevalent in 98 countries and responsible for increasing health problems [3,4]. About a million cases of CL reported in the last 5 years and 310 million people at risk. Because of labor migrants, refugees and cause of international travel, cases are also being seen in new regions [5]. First reported case of CL in Nepal was in 2006 which were imported from gulf countries. But now, there is increasing number of reports of natives of CL from far-western and central part of Nepal [6-9]. Here we report three cases of CL.

## CASE REPORT

### First case

It's a case of 40 years housewife native in Kathmandu who presented with asymptomatic non-healing small

nodule at the philtrum with swelling of the central part of upper lip of 1 year duration (Fig. 1). She denied history of recent travel, fever, weight loss, pain or ulceration. Investigations were normal. Acid fast stain of slit skin smear and sputum were negative. Biopsy revealed multiple granulomas composed of lymphocytes, histiocytes with amastigotes. LD bodies were seen in Giemsa stain. Patient was treated with oral miltefosine 50 mg three times a day for 28 days with improvement.

### Second case

A 27 years old patient from Chitwan presented with multiple non-healing wound over the upper and lower extremities for 4 months. Patient had recently returned from Saudi Arabia. Initially the lesions started from right arm as painless eruptions which became pustular, gradually broke up into an ulcer and few of which heal with scarring. There were number of lesions involving both the lower limbs, upper limbs and abdomen. Examination revealed multiple erythematous plaques over right and left thighs, arms, forearm, measuring 1x1 cm to 4x3cm with surface ulceration and crusting (Fig. 2). Histopathological examination revealed dermal

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aggregates of mixed inflammatory cells including nuclear polymorphs, lymphocytes, histiocytes, plasma cells.

**Third case**

A 52 years old male from Ilam, a labour worker, returnee from Saudi Arabia, attended with non-healing wound over the extensor aspect of right leg, forearm and abdomen for 2 months. Local examination revealed large erythematous plaque with superficial crustations. There were verrous plaque in the right leg in linear pattern (Fig. 3). Biopsy specimens showed dense granulomatous reaction with multinucleated giant cell, epithelioid cells and LD bodies (Fig. 4). Patient was treated similarly with oral miltefosine 50 mg three times a day for 28 days. Comparative tabulate form of all the cases is given in Table 1.

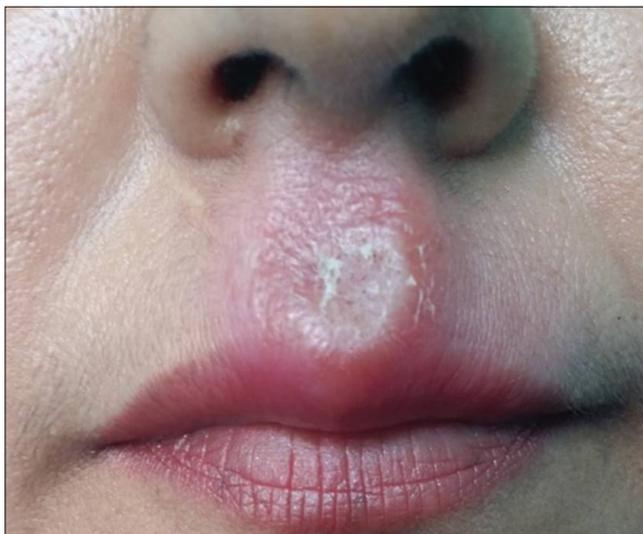
**DISCUSSION**

Cutaneous leishmaniasis is an emerging public health problem in Nepal [4]. From 2006 AD of first reported

case of CL to present context, there are increasing number of cases being reported from different parts of country [6-9]. Previously, majority patient had history of travel to gulf countries but recently a studies denies such history in majority of patients [9]. The geographic distribution of our cases of CL evaluated reflects travel and immigration patterns; two of the patients were returnees from Saudi Arabia, however, one of them

**Table 1:** Profile of Patients

Case	1	2	3
Age	40	27	52
Sex	Female	Male	Male
Address	Kathmandu	Chitwan	Ilam
Duration of Disease	1 year	4 months	2 months
Occupation	Housewife	Cook	Labor worker
Foreign travel	No	Saudi Arabia	Saudi Arabia
Site of lesions	Philtrum	Thigh, arm, forearm	Leg, forearm, abdomen
Biopsy	Confirmed	Confirmed	Confirmed
Treatment	Miltefosine	Miltefosine	Miltefosine



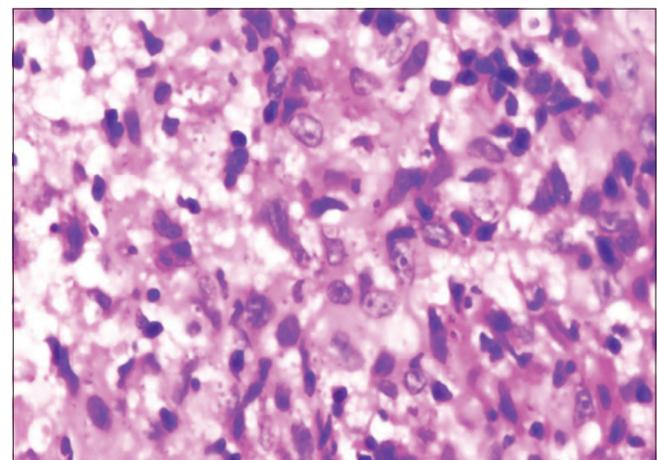
**Figure 1:** Lesion in the philtrum.



**Figure 3:** Different stages of lesions of case 3.



**Figure 2:** Different stages of lesions of case 2.



**Figure 4:** LD bodies.

denies any travel outside Nepal, similar to case being reported.

Diagnosis of cutaneous leishmaniasis is history and clinical examination, confirmed by demonstration of amastigotes in Giemsa stained smears from infected skin by FNAC, presence of leishmanial granulomas in the dermis in H and E specimens, growth of promastigotes in Nicolle-Novy- macNeal (NNN) culture medium or Leishmanial DNA by PCR [10].

After the recent report of the native cases, there is serious concern of increasing number of CL cases in days to come. However, because of non-endemicity of CL in Nepal and heterogeneous presentation, it can easily be missed clinically and reported cases could be the tip of iceberg with a number of cases underreported and undiagnosed. Many different therapeutic interventions, including topical, systemic and non-pharmacological treatments, have been described. Systemic treatment with pentavalent antimonials is indicated for problematic sores like involvement of mucosa or cartilage, sores on the lower leg or over a joint, sores where scarring would be disabling or disfiguring. Oral miltefosine, available free of cost by Nepal government, was used in our cases with good improvement.

## CONCLUSION

Though, cutaneous leishmaniasis is rare in Nepal, it's time to be highly alert about its possibility in every chronic nodulo-ulcerative lesion for proper and timely treatment to reduce the morbidity associated with it.

## Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

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