



## Cutaneous Larva Migrans: A Case Report

**Bhaskaran Sathyapriya<sup>1\*</sup>, Krishnan Mahalakshmi<sup>2</sup>, Kesavaram Padmavathy<sup>3</sup> and Purushothaman Lakshmanan<sup>4</sup>**

<sup>1</sup>Reader, Department of Anatomy, Sree Balaji Dental College & Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamilnadu, India

<sup>2</sup>Professor and Head, Department of Microbiology and Director for Research Laboratory for Oral & Systemic Health, Sree Balaji Dental College & Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamilnadu, India

<sup>3</sup>Associate Professor, Department of Microbiology and Co-Director for Research Laboratory for Oral & Systemic Health, Sree Balaji Dental College & Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamilnadu, India

<sup>4</sup>Consultant Orthodontist and Dentofacial Orthopaedician, Apollo Hospitals and Apollo White Dental, Chennai, Tamilnadu, India

**\*Corresponding Author:** Bhaskaran Sathyapriya, Reader, Department of Anatomy, Sree Balaji Dental College and Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamilnadu, India.

**Received:** May 29, 2018 ; **Published:** July 16, 2018

### Abstract

Cutaneous larva migrans (CLM) is a skin infection caused by hookworm larvae that typically infests animals like dogs and cats. The infested animals pass parasite eggs in their faeces and contaminate the soil. The persons who are exposed to soil contaminated with animal faeces are affected with this disease. It is also known as creeping eruption as the larvae migrate under the surface of the skin and cause itchy red lines or tracks. This case report describes a case of 25 year old female who acquired CLM from her terrace garden.

**Keywords:** Cutaneous Larva Migrans; Creeping Eruption, Hookworm Infection

### Introduction

Cutaneous larva migrans is a hookworm infection transmitted from warm, moist soil or sand to exposed skin. Cutaneous larva migrans is very common in tropical environments. It is caused by nematode larvae that infect the skin by penetration most commonly by non-human species of hookworms. *Ancylostoma braziliense* and *A. caninum* are the common parasite species causing creeping eruption [1-5]. The eggs of the parasite are passed in the feces of dog and cat and mature as larvae when placed in warm, moist soil or sand. The hookworm enters the skin through undamaged penetration, when bare skin contacts the ground, when a person walks barefoot or sunbathes.

CLM is an erythematous cutaneous eruption caused by penetration and migration of larvae. When the human skin comes in contact with these larvae, it penetrates but unable to invade the dermis of the skin unlike in an animal host. The larvae invade the dermis, enters the venous and lymphatic system and rarely to the lungs in an animal hosts. Migration to the trachea causes ingestion of the larvae by the animal host. The larvae mature in the intestine, produce egg, and finally excreted in the faeces completing the life cycle and let spread. Nematode larvae do not complete their full life cycle in a incidental human host unlike animal [1,2,4,5,5-13].

The hookworm tunnels along a disorganized zone, leaving a coiled, threadlike, reddish brown eruptions commencing from site of infection [7-9,11-14]. Secondary bacterial infection of the skin occurs due to itching of these eruptions [2,4-6,11,12].

Larvae may migrate immediately or can stay inactive for some months [1,5,7,8,11,15]. Once migrated, the larvae forms 2 - 3 mm wide raised, flesh-coloured and tortuous lesions about 3 - 4 cm from the site of penetration because of allergic immune response. This case report describes a case of 25 year old female who acquired CML from her terrace garden.

### Case Report

A 28-year-old female presented with pruritic, erythematous, single-track linear and serpiginous lesions located in the right forearm region who had the habit of terrace gardening. After a complete evaluation of medical history the patient was physically examined. The site of penetration of the hookworm larvae presented with a non-specific slightly raised flesh-coloured eruption associated with intense itching. The patient had the feeling of larva migration which produced 2 - 3 mm wide, tortuous lesions extending about 3 - 4 cm from the penetration site. The patient was diagnosed with cutaneous larva migrans syndrome based on the site and presentation of linear skin eruptions on the right forearm

region as well as her interest in terrace gardening (Figure 1 and 2). A complete blood count (CBC) showed increased white blood cells and differential count showed increased eosinophil, called peripheral eosinophilia



**Figure 1:** Cutaneous larva migrans.



**Figure 2:** Migration of the Larvae.

## Discussion

Cutaneous larva migrans (CLM) was first depicted as “the creeping eruption” acquired from subtropical and tropical regions of the world and diagnosed by a physician in 1874. The CLM skin disease caused by hookworm larvae that typically infests animals especially dogs and cats. It infects the humans walking barefoot along soil or beaches contaminated with animal feces.

The parasite is seen in many non-endemic countries around the world with increasing globalization and the growing incidence of foreign travel. The persons who are exposed to soil contaminated with animal faeces are affected with CLM [5,14].

The infested animals pass parasite eggs in their faeces and contaminate the soil. When the human skin comes in contact with these larvae, it penetrates but unable to invade the dermis of the skin and wanders beneath the skin [1,2,4,5-13]. In contrast, the larvae are capable of penetrating the dermis of the skin and affect the circulatory system in an animal host. They mature sexually to create more eggs once they reach the intestine and then excreted to start the cycle again.

Creeping eruptions generally emerge after three to four days after skin penetration and are usually coupled with severe itching sensation [5,7,9,10,14,16]. Diagnosis is on the basis of typical skin lesions and biopsy is usually not suggested.

Secondary bacterial infections, local or general allergic reactions and rarely parasite’s migration to internal organs are some of the complications of cutaneous larva migrans [2,4,7,11,12]. Heavy infestation of larvae leads to Loeffler’s disease which is the combination of pulmonary infiltrates and eosinophilia [17].

Cutaneous larva migrans is usually a self-limiting disease. The hookworm larvae eventually die as the humans are an accidental and “dead-end” host. The natural duration of the disease is dependent on the species of the larvae. In majority of the patients, lesions will disappear without treatment within 3 - 7 weeks [18,19]. Anti-helminthics are generally used to CLM patients. Local eruptions are treated topically whereas the widespread lesions are usually treated with oral treatment [5,20]. Anti-helminthics lessen itching sensation within one or two days of preliminary management and within seven days most of the lesions disappear. The larvae may also be destroyed by cryotherapy or CO<sub>2</sub> laser [4-6,10,12].

The itching sensation may be symptomatically relieved by antihistamines, topical corticosteroids and anti-helminthics. Proper antibiotics may also be used to manage secondary bacterial infection.

## Conclusion

Cutaneous larva migrans is a skin infection caused by a filariform larva which penetrates and migration into the epidermis through skin contact with animal feces. Clinically, the condition is manifested as an erythematous, migrating tortuous lesion. Topical treatment is better when compared with oral anti-helminthics when the larva is migrates. It is hoped that effective hookworm vaccines may be available in the future.

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**Volume 1 Issue 8 August 2018**

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