

## CREEPING ERUPTIONS OR CUTANEOUS LARVA MIGRANS (CLM): A CASE REPORT

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### ABSTRACT

**BACKGROUND:** Cutaneous larva migrans (CLM) or creeping eruption is a helminthic infection most commonly found in tropical and subtropical geographic areas acquired by walking barefoot on ground contaminated with dog and cat's faeces. CLM is an erythematous, serpiginous, cutaneous eruption caused by accidental percutaneous penetration and subsequent migration of larvae.

**CASE DESCRIPTION:** A 48-year-old male presented with history of Itching on the left ankle for the past two weeks and red raised fluid filled lesion on left ankle for the past seven days. On examination a single well defined flesh colored edematous serpiginous tract was seen on the lateral aspect of the left ankle. Histopathology demonstrated basket weave stratum corneum and subcorneal and intraepidermal clefting. The patient was given 12 mg single dose of Ivermectin and albendazole 400 mg single dose for 5 days.

**CONCLUSION:** The diagnosis of CLM is usually based on the typical clinical presentation, which consists of a pruritic, serpiginous lesion that advances in a patient with a history of walking barefoot.

**KEYWORDS:** Cutaneous Larva Migrans, Creeping Eruption.

**Introduction:** Cutaneous larva migrans (CLM), often known by the clinical symptom of creeping eruption, is an infectious illness caused by several different forms of hookworms. Animal excrement releasing eggs in the soil is the most prevalent mode of transmission, with larvae entering humans through direct skin contact. The cutaneous manifestation of *Strongyloides stercoralis* infection known as larva currens is distinct from cutaneous larva migrans. The latter exhibits rapid movement through the skin. Other non-larval cutaneous migrations are likewise excluded from CLM, such as loiasis, scabies, or larvae with dermal penetration. [1]

In warmer climates, such as the southeast United States, this disease is more common. It is also seen in Latin America, Southeast Asia, and Africa. The prevalence of the disease is often highest during wet seasons. A gradual migrating serpiginous rash with pruritus is a common symptom. The disease can infect any exposed place, although the feet are the most prevalent. Because the organisms are unable to develop a collagenase that can pierce the basement membrane and reach the gastrointestinal (GI) tract to reproduce, the disease's natural progression is self-limited. Topical thiabendazole, oral albendazole, or ivermectin are the medications of choice for treatment. Secondary bacterial superinfection or problems from improper empiric therapy are common causes of complications. [1, 2, 3]

CLM is a clinical manifestation demonstrated by creeping migration of larva through the skin. Organisms include animal vector nematode hookworms *Ancylostomabraziliense*,

*Ancylostomacanthum*, and *Uncinariastenocephala*. Human hookworms *Ancylostomaduodenale* and *Necatoramericanus* also can cause disease. [4]

**Case Report:** A 48 yearold male patient, farmer by occupation presented to the Department of Dermatology with complain of itching on the left ankle for the past two weeks and red raised fluid filled lesion on left ankle for the past seven days. On examination, a single well defined flesh coloured edematousserpiginous tract was seen on the lateral aspect of the left ankle. (Figure 1).



Figure 1: Single well defined flesh coloured edematousserpiginous tract on the lateral aspect of the left ankle.

**Investigations:** Blood investigation was performed. Blood picture revealed a DLC of neutrophils: 52%, lymphocytes :40% and eosinophils: 8%. The absolute eosinophil count was 864/cu.mmm. Rest all other investigations were within normal limits.

**Histopathology:** Under all aseptic precautions, a 4mm punch biopsy was taken 1.5cm away from the advancing edge of the tract on lateral aspectof left ankle, which demonstrated basket weave stratum corneum,subcorneal and intraepidermalclefting. The cleft contained fragments of statumcorneum and epidermis. Subepidermal tissue showed sparse to mild perivascular chronic mononuclear inflammatory infiltrate in superficial dermis. Dermoscopy of the lesion was also performed.Dermoscopy gave a clear view of the serpiginous tract (Figure 2 a) with a brownish periphery and yellowish centre (Figure 2b).



2A

2B

Figure 2: Dermoscopy of the lesion was performed which gave a clear view of the; a: Serpiginous tract, b: Brownish periphery and yellowish centre.

**Treatment:** The patient was given 12 mg oral dose of Ivermectin stat and albendazole 400 mg OD for 5 days. The lesion resolved within a period of 7 days.

## DISCUSSION

Creeping eruption is a parasitic dermatosis caused by hookworm larvae penetrating the epidermis of humans [1]. With a total incidence of 8.2 %, it is most common in tropical and subtropical geographic locations, as well as the southwestern United States. In Central America, South America, Southeast Asia, and Africa, it has become endemic. Percutaneous penetration and subsequent migration of the larvae of several nematode parasites causes an erythematous, serpiginous, pruritic cutaneous eruption [5]. The distal lower extremities or buttocks are the most common sites. *Ancylostomabraziliense* is the most prevalent cause, with *Ancylostomacanthum*, *Uncinariastenocephala* [6], and *Bunostomumphlebotomum* being less common. The incubation phase might last anywhere from one to six days. A single tract is produced by each larval and migrates at a speed of 1-3cm/day in epidermis because of lack of enzymes necessary to penetrate and survive in the deeper dermis.

Eggs of the nematode usually (*Ancylostomabraziliense*) are found most commonly in dog and cat feces. The eggs are passed through the stool onto warm sandy soil, which serves as a rich incubator and requires a temperature of 23-30°C. [6] The eggs subsequently mature into filariform larvae which penetrate the skin of new human host. Thus, the incidence of the disease is mainly dependent on environmental factors and behavioral factors. [7] Environmental factor includes warm and rainy season with damp sandy soil whereas behavioral factors are walking bare foot and lack of basic sanitation. [7] It is more common among children and young males in rainy season. It can be explained by gender-related behavioral patterns like males walking bare foot in fields or children playing in sandy soil.

Characteristic clinical picture of CLM is so distinctive that the skin biopsy and laboratory investigation are not generally required. The invasive procedure like skin biopsy rarely identifies the parasites, since the anterior end of the track does not necessarily indicate the location of larva. [1] Recently, epiluminescence microscopy has been used to visualize larva but the sensitivity is not known. [1] Complications of CLM are infective and allergic. Infective includes superadded infection with *Staphylococcus aureus* or *Streptococcus pyogenes* due to eczematization. Rarely it may present with vesicobullous lesion, folliculitis and allergic pulmonary response (presents as Löffler's syndrome).[1]

In Indian scenario, the disease commonly occurs in the coastal areas of the country where the suitable condition exists. [6] This entity is considered quite rare in Northern India as the environmental conditions are not suitable i.e. the type of soil and extremes of temperature. However, the present case was reported in Uttar Pradesh. The probable factor for the occurrence of this entity in the non-endemic region may be due to the increased level of hookworm infection in stray animals. Also, the behavioral factor i.e. walking bare foot predisposes the condition. Thus, we need further studies on the incidence of CLM in order to know the other factors which are responsible for the occurrence of CLM in the North Indian region. In our patient, diagnosis was based on clinical features. Although the sensitivity of dermoscopy is low it can help with the diagnosis. Because the larvae can progress up to 2cm ahead of the visible burrow, biopsies aren't very useful. Wheezing, a dry cough, and urticaria can all be symptoms of extensive lesions. Creeping eruption is a self-limiting dermatosis that normally resolves in 2-8 weeks but can last up to 2 years in rare cases, with a good prognosis. Secondary infection and eczema are typical side effects.

Although the infection is self-limiting, topical thiabendazole 10 percent solution or 15 percent ointment may be tried first if the infection is local. For 5 to 10 days, apply the cream 2 to 3 times daily. Small studies have shown that relief from pruritus can start as soon as 48 hours after starting treatment, with cure rates as high as 98 percent after 10 days. The lack of systemic absorption and adverse effects is the most significant benefit of topical treatment. Nonetheless, several applications per day limit the utilisation, and utility is less valuable with multiple lesions.

Cryotherapy has been used to treat local diseases in the past. The use of liquid nitrogen, solid carbon dioxide, or ethylene chloride spray to freeze the leading edge of the skin has been demonstrated to be ineffective and should be avoided.

Albendazole and ivermectin are first-line systemic therapy for multiple lesions or severe infestation. Oral albendazole (400 mg daily for 3 to 5 days) is quite successful, with cure rates approaching 100%. According to several research, a 7-day course of albendazole can reduce the risk of recurring illness. Oral ivermectin is also effective, and it has the advantage of only requiring a single dose of 12 mg by mouth. With ivermectin treatment, cure rates are near 100%. In the present case the patient was given 12 mg oral dose of Ivermectin stat and albendazole 400 mg OD for 5 days. The lesion resolved within a period of 7 days.

Mebendazole is another antihelminthic drug, however it has low bioavailability, absorption, and efficacy, therefore it should not be used as a first-line treatment. Topical steroids, oral steroids, and antibiotics are all unsuccessful. While systemic corticosteroids can help with itching, their side effects make them ineffective.

In addition to pharmacological treatment, prohibiting dogs on beaches may reduce larval deposition in the soil. Avoidance of direct skin contact with contaminated soil by covering the ground with impenetrable material, wearing footwears, avoiding bare feet walking, and de-worming the pets are preventive measures. Towels, for example, may not always guard against transmission, although wearing protective footwear can help. [3,4,8,9]

**Conclusion:** Based on the clinical findings supported with the histopathological findings and dermoscopy, we came to the diagnosis of Cutaneous Larva Migrans. The diagnosis of CLM is usually based on the typical clinical presentation, which consists of a pruritic, serpiginous lesion that advances in a patient with a history of walking barefoot. We conclude that sporadic cases of creeping eruption should be kept in mind in differential diagnosis of any creeping lesion even in non-endemic areas.

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