

Cutaneous Larva Migrans at The Back of An Infant: An Atypical Presentation of A Common Disease, And A Literature Review

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Abstract- *Cutaneous larva migrans (CLM) is a parasitic disease caused by the percutaneous migration into human skin of the larvae of certain nematodes, predominantly *Ancylostoma braziliense* and *Ancylostoma caninum*. It is widespread in tropical and subtropical areas and is associated with exposure to contaminated sand or soil, mainly from infected animals (such as dogs and cats). This case report describes a 1-year-old male with classic skin lesions of CLM and the clinical details, diagnostic considerations as well as management.*

Keywords: *Helminthic infection, Hookworm Larva, Larva Migrans, Tropical Area*

I. INTRODUCTION.

Cutaneous larva migrans (CLM) is a parasitic infection most commonly resulting from the penetration of hookworm larvae into the skin, emerging predominantly from *Ancylostoma braziliense* and *Ancylostoma caninum* [1]. These species of hookworms are general intestinal parasites of dogs and cats [2]. Humans are not the host but can be infected through mouth-to-hand contact with contaminated soil, sand, and feces in areas defecated on by dogs or cats [3].

The larvae penetrate the skin, generating serpiginous tracks of inflammation and pruritus [4]. However, since they cannot undergo their lifecycle in humans, they do not develop into adult worms [5]. Pruritic, serpiginous (from the Latin *serpere*, meaning to creep) — a description so evocative that it turns out to be "characteristic" to the serrated sink of the skin, with associated inflammation and swelling [6].

In tropical and subtropical regions, particularly in the areas of lacking proper sanitation and hygiene, CLM is prevalent [7]. It is also observed in travellers who go to visit these regions.(8). The diagnosis of CLM is usually made based on the clinical presentation and the results of skin biopsies or scrapings [4].

II. CASE REPORT

O.M was a 1year old infant whose mother brought to the Clinic with complaints of a rash at the back of her child of 4days duration prior to presentation. Mother said that the rash was itchy, (evidenced by the child been irritable and restless), erythematous, and serpiginous. Over the course of several days, the lesions gradually transformed from little elevated patches into twisting trails.

On physical examination, the infant was conscious, irritable, and in no form of distress. She had a temperature of 36.7 °C, pulse rate of 90 beats per minute, respiratory rate of 26 breaths per minute, and weighed 10 kg.

On examination of the back, the patient had a distinct, linear, erythematous track with elevated borders and a central clearing that was about 6cm long when examined, Consistent with the typical clinical presentation of CLM, the lesion had a serpentine pattern. Patient only had mild discomfort but no systemic symptoms such as fever or malaise. The patient mother mentioned carrying patient to her farm in the Village Few days before onset of symptoms, when she went to harvest Cassava from her farm and patient was barefooted and allowed to crawl around

the farm while mother was harvesting the Cassava .Dogs were allowed to roam freely in this village, which was likely the source of the infection. Her Village was a typical rural area located in the tropical regions of Benin in Ovia northeast local government area of Edo state.

Routine blood test done were all normal. No eosinophilia.

Skin scrapings for Microscopy was done which showed no Ova or Adult worm.

Serological test for *Ancylostoma spp* was not requested for, because it was not routinely done. A

biopsy was not performed in this Case as diagnosis was clear from Clinical presentation.

He was placed on albendazole syrup (15 mg/kg per day) for 3 consecutive days and chlorpheniramine syrup 1 mg/ml for 72hrs. A follow-up visit 4 days later was marked by absence of irritability but the persistence of a few serpiginous lesions.

He was prescribed topical ivermectin cream with a total resolution of the lesions at follow-up, no new tracks were observed 2 weeks later. Patient relative was counselled on precautions against exposure to potential infection source in the near future.



Figure 1: showing Cutaneous Larva Migrans on the back of our patient.

III. DISCUSSION

The most prevalent acquired tropical disease, CLM, was first discovered in tropical and subtropical regions, including Africa, the Middle and South Americas, and Southeast Asia [9]. But because more people are traveling abroad, this isn't limited to these regions alone. The primary causal organism is the larvae of *Ancylostoma braziliense*. The parasitic life cycle in CLM starts when animal feces are transferred into warm, moist soil, where the larvae are then generated. When the larvae come into touch with human skin, they can pierce the dermis [10]. Most people get infected when they wear open-toed shoes or go barefoot. There was a similar history of our patient going barefoot and without clothes .Patient was only on pampers and a short.

It is common for the larvae to move in tunnels between the stratum corneum and the stratum germinativum's epidermic layer [11]. It's possible to find larvae 1-2 cm away from the penetration site. Within a day, larvae can travel 2–5 mm. A pinkish, edematous, linear, serpiginous, and shapeless lesion that is 2-3 mm wide subsequently results [10].Although CLM can happen in the anogenital area, lesions are usually found on the lower distal extremities, such as the dorsa of the foot and the interdigital spaces of the toes and the lesion may possibly have secondary infection [12,13].The CLM lesion is quite itchy. Eruptions typically last two to eight weeks, but they might last for years [12,13]. Rarely do systemic problems occur, such as lung infiltrates, elevated immunoglobulin E (IgE) levels, and peripheral eosinophilia (Loeffler syndrome) [14]. There was no pulmonary involvement or eosinophilia in our case. The infectious larvae are released when

the eggs hatch in warm, moist soil or sand after being passed in animal (the definitive host) feces [15,16]. Upon direct contact, the larvae penetrate the skin of the human (the accidental host) and secrete proteases and hyaluronidases to facilitate their migration and penetration through the epidermis [17,18]. However, species like *Ancylostoma braziliense's* larvae are unable to reach the dermis because they lack certain collagenases [19,20]. As a result, they wander in the epidermis, creating the pathognomonic serpiginous tracks [12,21]. These tracks are typically found in areas of the body that are unintentionally exposed to contaminated soil, such as the hands, buttocks, and feet [10,16,22].

The penile shaft, breasts, chest, and anterior abdominal wall are less Common Sites for occurrence of CLM [17, 23]. Because infants frequently sit, crawl, and play on soiled soil, lesions typically develop on the buttocks, perineum, and lower abdomen area [17, 24]. It is unusual for our patient to have had CLM on his trunk. Literature has documented a few instances of CLM with atypical presentations (breasts, penile shaft, and scalp) [17,23,24].

For diagnosis, there must be a great deal of suspicion because it's primarily clinical. The diagnosis is based on a history of exposure and characteristic signs and symptoms [12, 25]. The trail does not predict the position of the migrating larva, making skin biopsy challenging [26]. *Strongyloides stercoralis* larvae can cause a fast-moving serpiginous eruption called larva currens, which is an important differential diagnosis. Migration is occurring at a rate of ≥ 5 cm/hour, which is quicker than CLM's rate of 1-2 cm per day. Scabies, contact dermatitis, migrating myiasis, and cercarial dermatitis are other differential diagnosis [17]. In the human host, the sickness is self-limiting, and the larvae die after 5–6 weeks [22].

Topical and oral antihistamines are used mostly for symptomatic treatment. Albendazole and ivermectin taken orally are curative [22]. 81–100% cure rates can be achieved with single doses of 200 mcg/kg of ivermectin, which is the first line of treatment [22, 26-27]. There are very few or no adverse effects, and it is well tolerated. Its effectiveness and safety for infants and kids under 15 kg have not been proven. Cure rates for albendazole range from 46 to 100% with a single dose [25]. It has the benefit of being well

tolerated by infants older than six months, therefore it might be applied in our situation [25]. The effectiveness of topical treatments for multiple lesions or for consequences such hookworm folliculitis is limited [25].

IV. CONCLUSION

A common parasitic skin infection, cutaneous larva migrans is characterized by characteristic serpiginous lesions. The significance of clinical diagnosis and prompt albendazole or ivermectin treatment is emphasized in this case report. In order to lower the risk of infection, preventive actions are essential, such as avoiding contaminated environments. Being aware of this condition is essential, particularly for people who live in endemic areas or engage in outdoor activities where exposure is frequent.

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Ethical approval: This was not applicable.

Competing interest: There was no conflict of interest among the authors.

Contributions by the Authors:

This work was carried out in collaboration among all authors. Author EE conceptualized and designed the study. Author EE and IIO produced the manuscript draft, Author BN, AS and IIO contributed to drafting of the manuscript, Author JOO, BN and IIO reviewed the manuscript. All authors read and approved the manuscript for submission.

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