



ATYPICAL CUTANEOUS LARVA MIGRANS WITH RAPID IMPROVEMENT AFTER INITIAL ALBENDAZOLE THERAPY: A CASE REPORT

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ABSTRACT

Cutaneous larva migrans (CLM) is a zoonotic helminthiasis caused by the penetration of animal hookworm larvae into the human epidermis and characterized by pruritic serpiginous lesions. This disease is commonly found in tropical and subtropical regions due to exposure to soil or sand contaminated with dog or cat feces. Lesions typically appear on the lower extremities due to direct contact with the soil, but can occur in other locations, posing diagnostic challenges. This study aims to describe the clinical presentation of CLM with unusual lesion locations and highlight the rapid clinical response following initial albendazole therapy. This study used a descriptive observational design with a single case report approach. The study subject was a single patient diagnosed with Cutaneous Larva Migrans with atypical clinical manifestations based on history, physical examination, and the clinical judgment of the treating physician. The patient was selected purposively because of her atypical clinical presentation and interesting therapeutic response to report. The analysis was conducted descriptively, presenting the chronology of the disease course, diagnostic process, response to therapy, and clinical outcomes of the patient. The patient received 400 mg of albendazole once daily for three days and 10 mg of cetirizine once daily. After the first dose of albendazole, the sensation of larval movement and pruritus disappeared. A gradual evaluation revealed a decrease in lesion activity after the second dose, as well as drying of the migration path after the third dose. On the fifth day after therapy, the lesions appeared to be drying out with reduced erythema, indicating a rapid clinical response to anthelmintic therapy. CLM can occur in non-predilection sites such as the trunk and upper extremities, potentially presenting diagnostic challenges. A rapid clinical response to albendazole not only effectively halts larval migration but also has important diagnostic value in atypical presentations.

Keywords: albendazole; atypical cases; cutaneous larva migrans; creeping eruption; rapid therapeutic response

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INTRODUCTION

Cutaneous larva migrans (CLM) is a zoonotic helminthiasis commonly found in tropical and subtropical regions. It is characterized by progressive, highly pruritic serpiginous skin lesions caused by the migration of animal hookworm larvae through the epidermis. The most common agents are *Ancylostoma braziliense* and *Ancylostoma caninum*, with humans serving as incidental hosts, preventing the parasite's life cycle from being completed (Tang et al., 2023). Transmission occurs when filariform larvae from soil or sand contaminated with dog or cat feces penetrate the skin, particularly in individuals walking barefoot or in direct contact with the soil. This disease is a neglected tropical disease with a high prevalence in Latin America, the Caribbean, Southeast Asia, and sub-Saharan Africa and is frequently reported in travelers from tropical regions (Rodriguez-Morales et al., 2021).

The classic clinical manifestation of CLM is characterized by erythematous, linear or tortuous lesions (serpiginous tracks) accompanied by intense itching and migrating several millimeters to centimeters per day. Diagnosis is generally based on a history of exposure and a characteristic clinical presentation, so laboratory tests or skin biopsy are rarely necessary (Sampurno & Soetisna,

2025). However, not all patients exhibit these characteristics. In some cases, CLM can present in atypical forms, such as papular, vesicular, pustular, follicular, eczematous, or even without a clear serpiginous pattern. This variety of manifestations often leads to delayed diagnosis and increases the risk of misdiagnosis as dermatitis, fungal infection, scabies, allergic reaction, or other inflammatory skin diseases (Sil et al., 2023).

Albendazole is a first-line therapy for CLM due to its high efficacy, ease of oral administration, and relative safety. Most patients show symptomatic improvement within days of treatment, although resolution of skin lesions may take several weeks. Rapid clinical responses following the initial dose of albendazole are not always reported, particularly in cases with atypical clinical manifestations. Therefore, documenting the clinical course and therapeutic response in these cases is crucial for increasing clinician awareness of the variety of disease presentations and supporting appropriate management (Agrawal et al., 2026).

After skin penetration, the larvae migrate superficially through the epidermis at a rate of several millimeters to centimeters per day, and the infection is usually self-limiting within 4–8 weeks. The typical manifestation is a serpiginous track on the lower extremities, although multiple or widely distributed lesions may occur and resemble other dermatoses, thus posing a diagnostic challenge.^{2,3} Albendazole is an effective systemic therapy that works by inhibiting β -tubulin polymerization and larval glucose metabolism; administration of 400 mg/day for 3–7 days provides a high cure rate with clinical improvement within 48–72 hours (Osman et al., 2024). This study aims to describe the clinical presentation of CLM with unusual lesion locations and highlight the rapid clinical response following initial albendazole therapy.

METHOD

This study is a case report describing the atypical clinical manifestations of Cutaneous Larva Migrans (CLM) and the rapid clinical response following initial albendazole therapy. The case report was prepared in accordance with the CARE (CAse REport Guidelines) to ensure completeness and transparency in clinical case reporting. This study used a descriptive observational design with a single case report approach. The focus of the study was to document the clinical characteristics, diagnostic process, management, and clinical outcomes of the patient during treatment.

The study subject was a single patient diagnosed with Cutaneous Larva Migrans with atypical clinical manifestations based on history, physical examination, and the clinical judgment of the treating physician. The patient was selected purposively because of her atypical clinical presentation and interesting therapeutic response to report. Data were obtained retrospectively from the patient's medical records and clinical observations during treatment. The data collected included: patient demographic characteristics (age, gender, occupation), history of exposure to risk factors, medical history, chief complaint and accompanying symptoms, results of dermatological physical examination, ancillary tests performed (if available), differential diagnosis, therapies administered, including dosage, frequency, and duration of albendazole administration, clinical development after therapy and clinical documentation in the form of photographs of lesions before and after therapy (with patient consent).

The patient was given albendazole therapy according to applicable clinical recommendations. During therapy, changes in lesion morphology, pruritus intensity, the appearance of side effects, and overall clinical improvement were monitored. The analysis was conducted descriptively, presenting the chronology of the disease course, diagnostic process, response to therapy, and clinical outcomes of the patient. The case results were compared with current literature on cutaneous larva migrans, particularly cases with atypical manifestations and the effectiveness of albendazole therapy, to identify similarities and differences.

The patient's identity was kept confidential by removing all potentially identifiable information. The patient provided written informed consent for the publication of clinical data and photographic documentation. The case report was written in accordance with the principles of the Declaration of Helsinki and ethical standards for scientific publication. The analysis was conducted descriptively, presenting the chronology of the disease course, diagnostic process, response to therapy, and clinical outcomes of the patient.

RESULT

Cutaneous larva migrans (CLM) is a skin infestation by nematode larvae, typically originating from contaminated soil. It is characterized by serpiginous lesions accompanied by itching due to larval migration through the epidermis. This case reports a 40-year-old man who presented with a chief complaint of itching in the abdomen, right flank, and left arm that had persisted for seven days. The patient also experienced a sensation of something moving under the skin, with linear serpiginous lesions appearing on the skin. There were no complaints of fever or pain. The patient's occupation as a farmer, frequently working in rice fields without adequate protective clothing, is a significant risk factor for larval infestation from contaminated soil. There was no history of similar illnesses or allergies.

Physical examination revealed a moderately ill patient with a *compos mentis* level of consciousness and a general physical examination within normal limits. Dermatological examination revealed lesions on the left upper extremity and the anterior and right thoracoabdominal regions. Efflorescence was found in the form of multiple erythematous plaques with sharp borders and serpiginous configuration with varying sizes of approximately $4 \times 0.5 \times 0.3$ cm to $6 \times 0.1 \times 0.1$ cm which were scattered discretely. Some lesions were accompanied by vesicles to bullae and blackish brown crusts. The initial clinical picture before therapy showing typical serpiginous lesions in the thoracoabdominal region and upper extremities is documented in Figure 1 Based on the history and typical clinical picture, the diagnosis of cutaneous larva migrans or creeping eruption was established without additional supporting examinations.



Figure 1. Before Therapy

Management of this patient included education and drug therapy. Education was provided regarding re-exposure prevention, including recommendations for wearing long-sleeved clothing and footwear when working in the rice fields. Pharmacological therapy consisted of albendazole tablets at a dose of 400 mg once daily for three days, combined with cetirizine 10 mg once daily to reduce itching. After the first dose of albendazole, the patient no longer felt the sensation of movement under the skin or the previously dominant itching. Clinical changes after the first dose, indicating a decrease in serpiginous lesion activity, are shown in Figure 2.



Figure 2. after dose 1

Clinical improvement continued throughout therapy. After the second dose of albendazole, the lesions appeared to diminish and no longer showed active migration, as seen in Figure 3. Evaluation after the third dose on the third day of therapy showed that the erythematous plaques began to flatten and the larval migration trails appeared to dry out, as documented in Figure 4. These findings indicate a rapid response to the anthelmintic therapy.



Figure 3. after dose 3



Figure 4. after dose 4

Follow-up monitoring on the fifth day after therapy showed a more pronounced clinical improvement compared to the initial condition, with the lesions drying out and reduced skin erythema, as seen in Figure 2.5. Based on this clinical course, the patient's prognosis was assessed in terms of life expectancy, function, and recovery. The rapid clinical response after albendazole administration indicates that this therapy is effective in halting larval migration and accelerating lesion resolution in cases of cutaneous larva migrans.



Figure 5. Day 5 after therapy

DISCUSSION

In this case, multiple linear, erythematous lesions with a serpiginous configuration were found on the upper extremities and thoracoabdominal region, accompanied by intense pruritus and a sensation of subcutaneous movement, consistent with cutaneous larva migrans (CLM) (Sarkhel et al., 2026). Although the classic predilection site is the lower extremities, the trunk and upper extremity involvement in this patient represents an atypical presentation that has been reported in individuals with repeated environmental exposures, such as rice paddy workers without skin protection. A history of contaminated soil exposure supports the penetration mechanism of filariform larvae, primarily of the species *Ancylostoma braziliense* or *Ancylostoma caninum*, into the human epidermis as a dead-end host (Agrawal et al., 2026).

Pathogenically, larval migration within the epidermis triggers a local inflammatory response that results in a characteristic serpiginous course with dynamic lesion progression and intense pruritus. In atypical distributions, such as on the trunk and upper extremities, diagnosis is often more challenging because it can mimic other dermatoses such as contact dermatitis, scabies, or tinea

corporis. Therefore, in this patient, a history of high-risk environmental exposure and the characteristic lesion morphology are the primary basis for establishing a clinical diagnosis (Alshami et al., 2024).

Administration of albendazole 400 mg per day for three days in this case resulted in a rapid clinical response, characterized by a reduction in pruritus after the initial dose and drying of the serpiginous tracks over the following days. This response is consistent with albendazole's mechanism of action, which inhibits parasite microtubule formation, thereby halting motility and causing larval death. The efficacy of albendazole in CLM has been reported to be high, with cure rates approaching 100% and resolution of symptoms within approximately 72 hours, even in atypical presentations (Shrestha et al., 2024).

The rapid success of therapy in this patient also has important diagnostic value, as the response to albendazole helps establish the diagnosis of CLM and differentiate it from other clinically similar conditions. Overall, this case confirms that CLM can present in atypical forms in non-predilection areas, especially in individuals with high-risk environmental exposures, and demonstrates that early albendazole therapy plays a crucial role in accelerating lesion resolution and preventing complications such as secondary bacterial superinfection (Tianyi et al., 2018).

Cutaneous Larva Migrans (CLM) is a skin infection caused by the penetration of zoonotic nematode larvae, particularly *Ancylostoma braziliense* and *Ancylostoma caninum*, which commonly originate from dogs and cats. This disease is commonly found in tropical and subtropical regions, including Indonesia, where high humidity and environmental conditions favor larval development in the soil (Jain et al., 2023). Humans are incidental hosts, so the larvae are unable to complete their life cycle; instead, they migrate through the epidermis, causing characteristic skin lesions consisting of tortuous, erythematous tracks (serpiginous tracks) accompanied by intense pruritus (Stufano et al., 2022).

This case is interesting because it exhibits an atypical clinical picture (atypical cutaneous larva migrans). CLM is generally characterized by one or more distinct serpiginous tracks, with a migration rate of approximately 2–3 mm to several centimeters per day (Aguirre et al., 2020). However, in this case, the lesions do not fully demonstrate the classic pattern, making initial diagnosis more difficult. Atypical manifestations can include multiple papules, vesicles, inflammatory plaques, folliculitis, eczematous lesions, short, branching lesions, or even no clear migration path. These variations can be influenced by the larval species, the number of infecting larvae, the host's immune response, the site of penetration, and previous therapy, which can alter the clinical presentation (Gunawan et al., 2020).

The diagnosis of CLM is primarily clinical and relies heavily on history and physical examination. A history of contact with soil, sand, gardens, beaches, or environments contaminated with dog and cat feces is an important clue. In endemic areas, a history of walking barefoot or engaging in outdoor activities is a major risk factor (Alvarez et al., 2025). In atypical cases like these, the differential diagnosis becomes broader, including tinea corporis, allergic contact dermatitis, atopic dermatitis, scabies, larval chancres caused by *Strongyloides stercoralis*, herpes zoster, insect bite reaction, granuloma annulare, and eosinophilic cellulitis (Wells' syndrome). Therefore, recognizing the clinical variations of CLM is crucial to prevent delays in diagnosis and treatment (Thadchanamoorthy & Dayasiri, 2021).

Although laboratory tests are nonspecific, some patients may exhibit mild eosinophilia. Skin biopsies are rarely performed because the larvae are often located several centimeters in front of the clinically visible lesion, resulting in low biopsy sensitivity (Pielok et al., 2026). Dermoscopy and Optical Coherence Tomography (OCT) have been reported to help identify the larval migration

pathway in some cases, but these modalities are not yet widely available and are not routinely used (Paolino et al., 2026).

Although oral ivermectin has been reported to provide a higher single-dose cure rate and more rapid symptom relief, albendazole remains a practical first-line therapy in many developing countries because of its wide availability, low cost, favorable safety profile, and comparable efficacy after a short treatment course. In resource-limited settings, albendazole therefore continues to be an effective therapeutic option for both typical and atypical CLM (AO Elsaftawy et al., 2023).

This case highlights that CLM should remain a differential diagnosis in patients presenting with intensely pruritic linear or serpiginous lesions, even when located outside the classical predilection sites (Paolino et al., 2026). Careful occupational and environmental history taking is essential, particularly in tropical countries where agricultural exposure is common. Prompt recognition and early initiation of albendazole therapy can result in rapid symptom resolution, prevent unnecessary investigations and inappropriate treatments, and reduce the risk of secondary complications (Hawdon & Wise, 2020).

CONCLUSION

This case illustrates cutaneous larva migrans (CLM) with an atypical presentation, which is nevertheless recognizable by the association between exposure history and skin lesion pattern. CLM is a skin infection caused by penetration of animal hookworm larvae that migrate superficially through the epidermis and cause pruritic serpiginous lesions, particularly in individuals with a history of contact with contaminated soil or sand in tropical regions. The atypical morphological variation and distribution of the lesions in this patient can mimic other dermatoses, potentially complicating the clinical diagnosis. In this case, administration of albendazole as first-line therapy demonstrated a rapid response, halting lesion migration and improving symptoms, confirming the diagnosis of CLM. These findings emphasize that careful history taking, recognition of lesion patterns, and early intervention are crucial in accelerating disease resolution and preventing complications such as secondary infections.

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