Cureus
Part of SPRINGER NATURE

Open Access Case Report

Something Is Moving Inside My Foot: A Case of Cutaneous Larva Migrans in a Returning Traveller

Review began 10/30/2026
Review ended 11/11/2026
Published 11/16/2026

© **Copyright** 2026
Cunha et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

DOI: 10.7759/cureus.119751

Maria Inês Cunha [1], Renato Fernandes [2], Diogo Lobo [3], Catarina Reis [4]

1. Family Medicine, Unidade de Saúde Familiar Terras de Azurara, Unidade Local de Saúde de Viseu Dão-Lafões, Mangualde, PRT 2. Family Medicine, Unidade de Saúde Familiar Viseu Cidade, Unidade Local de Saúde de Viseu Dão-Lafões, Viseu, PRT 3. Family Medicine, Unidade de Saúde Familiar Alves Martins, Unidade Local de Saúde de Viseu Dão-Lafões, Viseu, PRT 4. Family Medicine, Unidade de Saúde Familiar Grão Vasco, Unidade Local de Saúde de Viseu Dão-Lafões, Viseu, PRT

Corresponding author: Maria Inês Cunha, mismcunha@gmail.com

Abstract

Cutaneous larva migrans (CLM) is a self-limiting but intensely pruritic dermatosis caused by percutaneous penetration of zoonotic hookworm larvae, typically acquired through skin contact with soil or sand contaminated by dog or cat faeces. It is the most common skin condition reported among travellers returning from tropical destinations, yet it remains underrecognised in non-endemic primary care settings, where its serpiginous morphology can be mistaken for other dermatoses. We describe the case of a 28-year-old woman who presented to a primary care clinic with a progressively enlarging, intensely pruritic, and erythematous lesion on the dorsal aspect of her left foot, approximately three weeks after returning from a beach holiday in Mexico. She described a sensation of something moving beneath the skin and could visually track the slow migration of the lesion. She had previously been treated elsewhere with a topical corticosteroid-antifungal combination for 10 days without improvement. On examination, there was an erythematous serpiginous track with papular lesions along its course and linear excoriations on both feet. The characteristic morphology, combined with a compatible travel and exposure history, supported a clinical diagnosis of CLM, which was supported by an informal same-day teledermatology consultation; no biopsy or laboratory testing was performed. The patient was treated with oral albendazole 400 mg daily for five days, with complete resolution of pruritus and marked improvement of the lesion at the two-week follow-up. This case highlights the diagnostic value of a detailed travel history in patients presenting with pruritic skin lesions in primary care, the risk of misdiagnosis when this history is overlooked, and the importance of engaging patients as active participants in their own diagnostic process, particularly when they offer relevant contextual observations about their symptoms.

Categories: Family/General Practice, Infectious Disease, Dermatology
Keywords: creeping eruption, cutaneous larva migrans, hookworm infection, primary healthcare, travel medicine practice

Introduction

Cutaneous larva migrans (CLM), also known as creeping eruption or hookworm-related cutaneous larva migrans, is a parasitic skin disease caused by percutaneous penetration of the third-stage (filariform) larvae of animal hookworms, most commonly *Ancylostoma braziliense* and *Ancylostoma caninum* and less frequently *Uncinaria stenocephala* [1,2]. Adult worms live in the small intestine of dogs and cats, whose faeces contaminate soil and sand; under warm, moist, and shaded conditions, the eggs hatch and develop into infective larvae that penetrate unprotected skin [2]. Humans are accidental, dead-end hosts: because the larvae are unable to cross the epidermal basement membrane, they remain confined to the epidermis, cannot complete their life cycle, and eventually die, which explains the self-limiting nature of the disease [3].

CLM is endemic in resource-poor communities of tropical and subtropical regions, but in high-income countries, most cases are seen in travellers [3,4]. In an analysis of the GeoSentinel Surveillance Network, skin disorders accounted for 18% of diagnoses in ill returned travellers, and CLM was among the most frequent dermatological diagnoses, with travellers to the Caribbean showing the highest proportionate morbidity from skin conditions [5]. Most travel-associated cases are acquired in the Caribbean, Latin America, Africa, and Southeast Asia, typically after walking barefoot or lying directly on beaches frequented by dogs and cats [1,6]. A recent series of 107 imported cases from a Spanish tropical medicine referral unit confirms that CLM remains a common imported dermatosis in southern Europe [7].

Clinically, a small erythematous papule appears at the site of penetration, usually within days of exposure, followed by a slightly raised, erythematous, linear, or serpiginous track that advances by up to a few centimeters per day [1,2]. Lesions most often involve the feet and buttocks [1,6]. Pruritus is characteristically intense and may disturb sleep, and scratching predisposes to bacterial superinfection; eczematization,

bullous lesions, and allergic reactions may also occur [2,4,8]. Although larvae usually die within weeks, untreated disease can persist for months [3,8]. The diagnosis is clinical, based on the characteristic morphology and a history of compatible exposure, and laboratory tests or biopsy are not routinely required [1,2,8].

Despite this typical presentation, CLM is frequently misdiagnosed outside endemic areas, and patients are often treated initially with topical corticosteroids or antifungals, prolonging symptoms [9]. In primary care, where most returning travellers first seek help, recognition depends largely on asking about recent travel and exposure. We report a case of imported CLM in which an initial misdiagnosis led to an ineffective course of topical treatment, and the diagnosis was ultimately reached through a focused travel history and attention to the patient's own description and interpretation of her symptoms.

Case Presentation

Patient history

A 28-year-old woman presented to her primary care clinic in mid-January 2024 with a pruritic, progressively enlarging lesion on her left foot. She had no relevant past medical or surgical history, had no history of atopy, was not taking any regular medication, and had no known drug allergies.

In December 2023, she had spent a 15-day beach holiday in Mexico with a male travel companion, returning approximately three weeks before presentation. During the trip, she walked on the beach wearing flip-flops and sustained several minor abrasions on her feet.

Four days after returning to Portugal, she noticed a small, erythematous, and intensely pruritic papule on the dorsum of her left foot. Over the following days, the lesion progressively elongated into a raised, erythematous, serpiginous track that appeared to advance a little further each day. The pruritus was markedly worse at night and disturbed her sleep. She described a distinctive sensation of "something alive moving" beneath the skin, which coincided with the extension of the track.

About three days after the onset of symptoms (approximately one week after returning), she sought care at a private clinic, where she was prescribed a topical combination of betamethasone and clotrimazole. She applied it as instructed for 10 days, without improvement in either the pruritus or the lesion, which continued to extend. The persistence of symptoms prompted her to attend her primary care clinic approximately one week after completing this treatment, approximately three weeks after symptom onset.

On direct questioning, she denied fever, malaise, cough, wheezing, generalised urticaria, abdominal pain, or diarrhea and reported no other skin lesions. Her travel companion had developed no similar lesions or symptoms.

Having searched online for images of lesions similar to her own, the patient herself raised the possibility that the lesion might be caused by a "worm" or larva.

Physical examination

The patient was afebrile and in good general condition. On the dorsum of the left foot, there was an erythematous, slightly raised, serpiginous track approximately 7 cm in length, with papular lesions along its course and a more inflamed leading end (Figure *1*). There were no vesicles or bullae, no purulent discharge, warmth, or surrounding cellulitis, and no regional lymphadenopathy. Linear excoriations were present on both feet, which may have reflected scratching associated with the intense pruritus or the minor abrasions sustained during the trip. Examination of the remaining skin, including the interdigital spaces, hands, wrists, buttocks, and trunk, showed no further tracks, burrows, or scaling.



FIGURE 1: Erythematous, raised serpiginous track on the dorsum of the left foot

Differential diagnosis and investigations

The differential diagnosis considered at presentation is summarised in Table *1*. Given the characteristic serpiginous, slowly migrating track, recent travel to an endemic area, a history of beach exposure with foot abrasions while wearing flip-flops, and the lack of response to topical corticosteroid-antifungal therapy, a clinical diagnosis of CLM was made. The diagnosis was supported by an informal same-day teledermatology consultation. No laboratory investigations or skin biopsy were performed, in keeping with current recommendations: CLM is a clinical diagnosis, there are no serological tests for zoonotic hookworm infection, and biopsy has a low yield because the larva is usually located beyond the visible end of the track [1,2,8].

Diagnosis	Typical features	Findings in this patient
Cutaneous larva migrans	Intensely pruritic, erythematous, serpiginous track advancing a few mm to cm per day; feet and buttocks; beach or soil exposure in tropics	Serpiginous track on the dorsum of the foot, slow daily migration, beach exposure in Mexico: consistent
Larva currens (*Strongyloides stercoralis*)	Urticarial, linear track moving rapidly (cm per hour), usually perianal, buttocks, or trunk; transient	Slow migration over days, foot location: not consistent
Tinea corporis/pedis	Annular, scaling plaque with active border; interdigital scaling	No scaling; no response to topical antifungal: not consistent
Allergic contact dermatitis	Eczematous, often vesicular plaque reproducing the shape of the contact; does not migrate	Linear migrating lesion: not consistent
Scabies	Generalised nocturnal pruritus, short burrows in interdigital spaces, wrists, and genitalia; contacts affected	Single lesion, no burrows elsewhere: not consistent
Phytophotodermatitis	Bizarre linear hyperpigmented or bullous streaks after contact with plants (e.g., lime) and sun; burning rather than itching; no migration	Progressive migration, intense pruritus: not consistent

TABLE 1: Differential diagnosis considered at presentation

Treatment

The patient was treated with oral albendazole 400 mg once daily for five days, as oral ivermectin was not available. She was advised to take it with a meal, to avoid scratching, to keep the area clean, and to return if signs of secondary infection or new lesions appeared. Preventive advice for future travel (wearing footwear on beaches and avoiding direct skin contact with sand) was also given. The expected outcome was rapid relief of pruritus and cessation of migration within days, followed by gradual fading of the track over the following weeks. The treatment was well tolerated, with no adverse effects reported.

Outcome and follow-up

At follow-up two weeks later, pruritus had resolved completely, and the track had stopped advancing. The lesion had improved markedly: it was flat and non-inflamed, persisting only as a faint, slightly hypopigmented serpiginous line with minimal residual erythema at its distal end (Figure *2*). No new lesions or signs of secondary infection were observed.



FIGURE 2: Hypopigmented serpiginous track on the dorsum of the left foot

Discussion

CLM is endemic in tropical and subtropical regions but is increasingly diagnosed in temperate countries because of international travel [3,4]. Our patient's profile is typical of imported disease. In a retrospective study of 107 cases seen at a tropical medicine referral unit in Barcelona, the mean age was 32.6 years, 58.9% of patients were women, most patients had a single lesion, and lesions were located mainly on the lower limbs (77.6%) [7]. Similarly, in a London series of 44 returning travellers, 95% reported beach exposure, and the feet were the most frequently affected site (39%) [9]. Mexico and the Caribbean coast are well-recognised sources of infection, consistent with GeoSentinel data showing the highest proportionate dermatological morbidity in travellers to the Caribbean [5].

The diagnosis of CLM is clinical and rests on two elements: the characteristic intensely pruritic, erythematous, serpiginous track and a history of compatible exposure [1,2,8]. Both were present in our patient, but the exposure history was only elicited at the second consultation. The main differential diagnoses are summarised in Table *1*. Larva currens, caused by *Strongyloides stercoralis*, deserves particular mention because it has different therapeutic and prognostic implications: it typically presents as a transient urticarial track around the buttocks and trunk that moves much faster than CLM, and it reflects a systemic infection rather than a self-limiting dermatosis [8]. Other entities, such as tinea, contact dermatitis, or scabies, lack the progressive, migratory pattern that is the hallmark of CLM. Rarer clinical variants, such as hookworm folliculitis or bullous CLM, can make recognition more difficult [2,6].

The initial misdiagnosis and treatment with a topical corticosteroid-antifungal combination illustrate a well-documented problem. In the London series, CLM was described as often misdiagnosed or treated incorrectly, and the median duration of symptoms before assessment at the specialist centre was eight weeks (range: 1-104 weeks) [9]. In our patient, the interval from symptom onset to diagnosis was approximately three weeks, shorter than in that series, but the initial misdiagnosis nevertheless resulted in an ineffective 10-day course of topical treatment and persistent symptoms. Topical corticosteroids may transiently reduce inflammation but do not act on the larva and may delay appropriate therapy. A recent report of an imported case in Albania similarly emphasised that recognising the characteristic lesion and integrating the travel history are the keys to diagnosis in non-endemic countries [10]. In primary care, where time is limited and dermatological complaints are common, a single question about recent travel and barefoot exposure can substantially change the diagnostic probability.

Although CLM is self-limiting, treatment is recommended because of the intense pruritus, the risk of secondary infection, and the possibility of a prolonged course, which may last weeks to months [3,8,11]. Oral ivermectin as a single dose of 200 µg/kg is generally regarded as the treatment of choice [3,8]. In a randomised trial of 21 patients, a single 12 mg dose of ivermectin cured all patients, whereas a single 400 mg dose of albendazole achieved a cure rate of only 46% because of relapses [12]. A review of published data reported cure rates of 81-100% with single-dose ivermectin and more variable rates of 46-100% with single-dose albendazole [11].

When ivermectin is unavailable or not preferred, multi-day albendazole regimens are an effective alternative [3,8]. In the London series, 24 of 31 patients (77%) treated with albendazole 400 mg daily for 3-5 days were cured after one course [9], and in the Barcelona series, resolution rates were similar for albendazole and ivermectin (88.6% and 88.9%, respectively), although about one in four treated patients required re-treatment [7]. Longer regimens of 400 mg daily for seven days cured all patients in two small Italian series of 11 and 24 patients with multiple or extensive lesions [13,14]. These data come from small, mostly non-comparative studies with heterogeneous regimens, so the optimal duration of albendazole therapy remains uncertain. The five-day regimen used in our patient was consistent with these reports and produced a rapid clinical response. Topical anthelmintics, such as thiabendazole, are an option for single lesions but require several daily applications for prolonged periods [8,11].

Prevention relies on avoiding direct skin contact with potentially contaminated sand or soil, wearing footwear on beaches, and avoiding lying directly on the sand, while at community level, regular deworming of dogs and cats and keeping animals away from beaches are recommended [1,4]. Brief pre-travel advice on these measures could prevent many cases.

The patient's own description of a sensation of movement and of the visible daily progression of the lesion was among the most informative elements of the history. We do not suggest that patient suspicion constitutes a diagnostic approach in itself; rather, this case illustrates how a patient-reported migratory pattern, combined with a focused travel and exposure history, can prompt the clinician to consider CLM and allow a clinical diagnosis without unnecessary investigations.

This report has limitations. The diagnosis was clinical, without histological or parasitological confirmation, although this reflects standard practice for CLM [1,2,8]. Follow-up was limited to a single visit at two weeks, when the lesion had not yet fully resolved, and no further in-person evaluation was performed; therefore, complete clearance and the absence of late recurrence could not be confirmed.

Conclusions

CLM should be considered in any traveller returning from a tropical or subtropical region with a pruritic, slowly migrating, serpiginous skin lesion, particularly when empirical treatment for more common dermatoses has failed. A systematic travel and exposure history remains an essential, low-cost diagnostic tool in primary care and can avoid ineffective topical treatments and unnecessary investigations. Recognition of the characteristic morphology and attention to patient-reported migration of the lesion facilitate early diagnosis and appropriate oral anthelmintic treatment. Where oral ivermectin is not available, a multi-day course of albendazole is an effective and well-tolerated alternative.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Maria Inês Cunha, Renato Fernandes, Diogo Lobo, Catarina Reis

Acquisition, analysis, or interpretation of data: Maria Inês Cunha, Renato Fernandes, Diogo Lobo, Catarina Reis

Drafting of the manuscript: Maria Inês Cunha, Renato Fernandes, Diogo Lobo, Catarina Reis

Critical review of the manuscript for important intellectual content: Maria Inês Cunha, Renato Fernandes, Diogo Lobo, Catarina Reis

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Wanat KA, Norton SA: Post-travel dermatologic conditions. CDC Yellow Book 2026: Health Information for International Travel. Oxford University Press, New York; 2025.
2. Hookworm (extraintestinal). (2019). Accessed: 2026: https://www.cdc.gov/dpdx/zoonotichookworm/index.html.
3. Feldmeier H, Schuster A: Mini review: hookworm-related cutaneous larva migrans. Eur J Clin Microbiol Infect Dis. 2012, 31:915-8. 10.1007/s10096-011-1404-x
4. Heukelbach J, Feldmeier H: Epidemiological and clinical characteristics of hookworm-related cutaneous larva migrans. Lancet Infect Dis. 2008, 8:302-9. 10.1016/S1473-3099(08)70098-7
5. Lederman ER, Weld LH, Elyazar IR, von Sonnenburg F, Loutan L, Schwartz E, Keystone JS: Dermatologic conditions of the ill returned traveler: an analysis from the GeoSentinel Surveillance Network. Int J Infect Dis. 2008, 12:593-602. 10.1016/j.ijid.2007.12.008
6. Hochedez P, Caumes E: Hookworm-related cutaneous larva migrans. J Travel Med. 2007, 14:326-33. 10.1111/j.1708-8305.2007.00148.x
7. López-Neila D, Salvador F, Martínez-Campreciós J, et al.: Imported cutaneous larva migrans: epidemiological, clinical, and therapeutic aspects analyzed in a referral tropical medicine unit in Barcelona. Am J Trop Med Hyg. 2025, 113:81-5. 10.4269/ajtmh.24-0856
8. Sunderkötter C, von Stebut E, Schöfer H, et al.: S1 guideline diagnosis and therapy of cutaneous larva migrans (creeping disease). J Dtsch Dermatol Ges. 2014, 12:86-91. 10.1111/ddg.12250
9. Blackwell V, Vega-Lopez F: Cutaneous larva migrans: clinical features and management of 44 cases presenting in the returning traveller. Br J Dermatol. 2001, 145:434-7. 10.1111/j.1365-2133.2001.04406.x
10. Puca E, Puca E, Savo I, Daka Priftaj A, Puca D, Fida M: Travel-associated cutaneous larva migrans: clinical recognition and management of an imported case in Albania. Parasitol Int. 2026, 114:103279. 10.1016/j.parint.2026.103279
11. Caumes E: Treatment of cutaneous larva migrans. Clin Infect Dis. 2000, 30:811-4. 10.1086/313787
12. Caumes E, Carriere J, Datry A, Gaxotte P, Danis M, Gentilini M: A randomized trial of ivermectin versus albendazole for the treatment of cutaneous larva migrans. Am J Trop Med Hyg. 1993, 49:641-4. 10.4269/ajtmh.1993.49.641
13. Rizzitelli G, Scarabelli G, Veraldi S: Albendazole: a new therapeutic regimen in cutaneous larva migrans. Int J Dermatol. 1997, 36:700-3. 10.1046/j.1365-4362.1997.00263.x
14. Veraldi S, Rizzitelli G: Effectiveness of a new therapeutic regimen with albendazole in cutaneous larva migrans. Eur J Dermatol. 1999, 9:352-3.