JMS 2026; Vol 9 (1):112-116
UDC: 616.5-002-022.39:575.16]:616.896-053.2(497.7)"2023"
DOI: https://doi.org/10.55302/JMS2691112mt

AUTOCHTHONOUS CUTANEOUS LARVA MIGRANS IN AN 8 YEAR OLD CHILD WITH AUTISM

Julija Mitrova Telenta
University Clinic of Dermatovenerology, Faculty of Medicine Ss."Cyril and Methodious" University in Skopje, North Macedonia

Abstract

Introduction: Cutaneous larva migrans (CLM) is a parasitic dermatosis caused by the epidermal migration of hookworm larvae, most commonly originating from dogs and cats. Human infection occurs through contact with soil or sand contaminated with animal feces, typically in tropical and subtropical regions.It is rare in temperate climates, including North Macedonia, but poses a diagnostic challenge when encountered.

Case report: We report the case of an 8-year-old boy with autism who presented in July 2023 with an acute onset of pruritic and burning skin lesions on the plantar surface of the left foot following contact with dogs and cats. Dermatological examination revealed a well-defined erythematous serpiginous tract with associated edema and a central black line at the advancing edge. Dermoscopic evaluation demonstrated a brownish linear structure corresponding to the larval body, a serpiginous erythematous background, brown dots, scaling, and yellow-white linear structures suggestive of empty larval tunnels. Laboratory findings showed mild eosinophilia (5.2%).

Treatment with oral albendazole, local cryotherapy, corticosteroids, and antihistamines resulted in marked clinical improvement within 10 days.

Conclusion: This case highlights a rare presentation of Cutaneous Larva Migrans in a non-endemic region. While diagnosis is primarily clinical, dermoscopy represents a valuable noninvasive tool for confirming active or residual infestation. Early recognition and timely antiparasitic therapy are essential for rapid symptom resolution and prevention of complications. Increasing reports in non-endemic areas emphasize the need for heightened clinical awareness in the context of travel and climate change.

Key words: Cutaneous larva migrans, dermoscopy, non-endemic region.

Introduction

Cutaneous larva migrans is a parasitic skin infection, presented as a migratory eruption of the skin characterized by creeping or moving parasite larvae in the skin. It is caused by larvae of several nematode parasites of the hookworm family (Ancylostomatidae) that usually infest cats, dogs and other animals.[1,2] Humans can be infected with the larvae by walking barefoot on sandy beaches or contacting moist soil that has been contaminated with animal feces. [3,4].

It is most commonly found in tropical or subtropical geographic locations, and it is very rare in temperate regions as our country, North Macedonia. Groups at risk include those with occupations or hobbies that bring them into contact with warm, moist, sandy soil.

Case report

An 8 -year-old boy with autism presented for evaluation at our clinic in July 2023. The child was agitated and irritated, so his parents noticed skin changes on his left foot and decide to consult dermatologist. The child had been in contact with dogs and cats, and the skin changes appeared a few hours before the examination. The erythema was spreading simultaneously with the movement of the black line on the surface of the skin on the lower side of the left foot, accompanied by a subjective burning sensation.

Dermatological examination revealed the presence of well-defined erythematous serpentine tract, edema and central black line within the erythematous area at the upper end. (Figure 1,2.)

Figure 1

Figure 2

Dermoscopic findings were characterized by the following features: brownish linear tract suggestive of cutaneous larva migrans body, serpiginous pinkish erythematous background, brown dots, zone of scales and yellow-white linear structures suggesting empty larval tract. (Figure 3,4).

Figure 3

Figure 4

Laboratory tests revealed elevated eosinophil levels (Eo=5.2). Treatment was initiated with Albendazole 200 mg tablets twice daily for 5 days, local cryotherapy, corticosteroid therapy, and oral antihistamines. After 10 days of treatment, the dermatological status improved.

Discussion

Cutaneous larva migrans is a well-recognized parasitic dermatosis caused by the transcutaneous penetration and migration of hookworm larvae within the epidermis [5]. The condition is most frequently associated with animal hookworms, particularly *Ancylostoma braziliense* and *Ancylostoma caninum*, although other species have also been implicated [5].

CLM and related helminthic infections remain significant public health concerns, especially in tropical and subtropical regions of developing countries [6,7].

The endemicity of cutaneous larva migrans is closely associated with poor sanitation and warm, humid climates [8]. Human infection occurs through direct contact with soil or sand contaminated with filariform larvae from animal feces, with activities such as walking barefoot or sitting on wet sand increasing exposure, as larvae may remain viable for several weeks to months under favorable conditions [8].

Although historically rare in Europe and mostly reported in returning travelers, both imported and locally acquired cases have risen in recent years, particularly in southern Europe, likely driven by climate change and increasing temperature and humidity, which favor larval survival [8].

Ancylostomiasis is zoonotic, with dogs and cats as definitive hosts and humans as incidental hosts following contact with contaminated soil or sand [9]. Larval migration is facilitated by proteolytic enzymes but limited to the epidermis, producing the characteristic serpiginous, erythematous lesions, typically on the feet, hands, and buttocks; in children, the buttocks, perineum, and lower abdomen are more commonly affected [10].

In dogs, infection is often asymptomatic but may cause gastrointestinal signs, anorexia, weight loss, or, rarely, fatal outcomes [11]. In humans, CLM usually develops after several weeks, presenting with intense pruritus 10–15 days post-penetration [10].

Lesions appear as erythematous papules that evolve into slowly advancing, sharply demarcated serpiginous tracts—the so-called "creeping eruption"—progressing millimeters to centimeters per day and sometimes persisting for months [6,10].

Excoriation can lead to secondary bacterial infection, while infants may present with irritability and sleep disturbance; extensive lesions may cause social stigma, particularly in children [7,10].

Diagnosis is primarily clinical, based on typical serpiginous tracks and relevant exposure or travel history [6,10]. Dermoscopy aids bedside differentiation from other linear dermatoses such as scabies burrows, larva currens, and dracunculiasis [12], while skin biopsy has limited value due to unpredictable larval location [13].

Various imaging techniques have been evaluated for the diagnosis of cutaneous larva migrans, with dermoscopy emerging as the most practical and informative tool. Elsner et al. (1997) were the first to apply dermoscopy in CLM diagnosis [14], while Zalaudek et al. (2008) described translucent brownish structureless areas arranged linearly, corresponding to the larval body, with dotted vessels highlighting the empty tunnels [14].

Subsequent studies, including Gonzalez-Ramírez et al. (2015) and Aldás (2018), confirmed these findings, reporting segmentally arranged translucent reddish-brown areas and brownish oval structures with a yellow periphery, respectively, representing the larva [14]. Other imaging modalities, such as optical coherence tomography, confocal laser scanning microscopy, near-infrared fluorescence, and high-frequency ultrasonography, have demonstrated the potential to visualize tunnels or larvae, though their practical utility is limited by cost, complexity, or inconsistent identification of the larva [14].

Collectively, these studies underscore that dermoscopy provides a reliable, noninvasive bedside method for identifying CLM and its characteristic larval tracks.

Although cutaneous larva migrans is a self-limited condition, with spontaneous larval death typically occurring within 5–6 weeks, laboratory findings may include eosinophilia, elevated serum IgE levels, or signs of secondary bacterial infection [10].

Awareness of atypical clinical presentations is essential, as these variants may complicate diagnosis and delay appropriate treatment. Uncommon manifestations reported in the literature include hookworm folliculitis, most often affecting the buttocks; diffuse multifocal papulovesicular eruptions involving the trunk; and migratory urticaria characterized by transient, shifting wheals [6,15,16].

Complications of cutaneous larva migrans range from secondary bacterial infections and allergic reactions to, rarely, visceral larval migration [10,15,16]. Secondary bacterial infections, typically arising from excessive scratching, represent the most frequent complication—occurring in up to 8% of cases—and can complicate the clinical picture by masking symptoms or postponing accurate diagnosis and treatment [17,18].

Management should focus on alleviating pruritus, eradicating the parasite, and preventing superinfection, with vigilance for signs such as pustular lesions or increased irritability that may indicate bacterial involvement.

Effective therapy primarily involves systemic or topical antihelminthics, often combined with antihistamines to control pruritus. Ivermectin given orally at 200 μg/kg once daily for 1–2 days represents the first-line treatment option, demonstrating cure rates of 81–100% with few adverse effects, however, its use is not recommended in children weighing less than 15 kg due to limited safety data, in accordance with WHO guidance [10].

Albendazole is the preferred systemic therapy for cutaneous larva migrans, with high cure rates and an acceptable safety profile in children over 12 months, while mebendazole provides an effective alternative [10]. Thiabendazole is generally avoided due to frequent adverse effects, and topical formulations of albendazole or thiabendazole may be used when systemic therapy is contraindicated, though they are less effective for extensive lesions [19, 20].

Preventive measures include reducing contact with contaminated soil, wearing protective footwear, routine deworming of domestic animals, and health education for travelers to endemic areas [7,13]. Rarely, physical interventions such as cryotherapy may be considered for persistent lesions [10].

Conclusion

We presented a case of larva migrans in child which is rare in our country. This is usually a clinical diagnosis, however dermoscopy can be useful in confirming active or residual stage of infestation.

Early antiparasitic treatment ensures rapid resolution of symptoms and prevents complications. The rising occurrence of both imported and autochthonous cases in non-endemic regions underscores the importance of maintaining clinical awareness in the context of travel and climate change.

References

1. Piccolo V. Update on dermoscopy and infectious skin diseases. DermatolPract Concept. 2019;10:e2020003.
2. Zalaudek I, Giacomel J, Cabo H, et al. Entodermoscopy: a new tool for diagnosing skin infections and infestations. Dermatology. 2008;216(1):14–23. doi:10.1159/000109353
3. Hla Aye MT, Kyaw AY, Rubel AR, Han MB, Mani BI, Chong VH. Cutaneous larva migrans. QJM. 2022;115:1–2. doi:10.1093/qjmed/hcac193
4. Purdy KS, Langley RG, Webb AN, Walsh N, Haldane D. Cutaneous larva migrans. Lancet. 2011;377(9781):1948. doi:10.1016/S0140-6736(10)61149-X
5. Jelinek T, Maiwald H, Nothdurft H, et al. Cutaneous larva migrans in travelers: synopsis of histories, symptoms, and treatment of 98 patients. Clin Infect Dis Off Publ Infect Dis Soc Am. 1994;19:1062–1066.
6. Heukelbach J, Feldmeier H. Epidemiological and clinical characteristics of hookworm-related cutaneous larva migrans. Lancet Infect Dis. 2008;8:302–309. [DOI] [PubMed] [Google Scholar]
7. Feldmeier H, Heukelbach J. Epidermal parasitic skin diseases: a neglected category of poverty-associated plagues. Bull World Health Organ. 2009;87:152–159.
8. Perić J, Lekić B, Reljić V, Ćirković L, Škiljević D. Cutaneous Larva Migrans – Report of 2 new Cases Locally Acquired in Serbia. Serbian Journal of Dermatology and Venerology. 2017; 9(4):149-153
9. Coelho WMD, Amarante AFT do, Apolinário J de C, et al. Occurrence of *Ancylostoma* in dogs, cats and public places from Andradina city, São Paulo state, Brazil. Rev Inst Med Trop Sao Paulo. 2011;53:181–184.
10. Shrestha A, K C K, Baral A, Shrestha R, Shrestha R. Cutaneous larva migrans in a child: a case report and review of literature. Ann Med Surg (Lond). 2023 Nov 16;86(1):530-534. doi: 10.1097/MS9.0000000000001512. PMID: 38222776; PMCID: PMC10783223.
11. Balassiano BCC, Campos MR, Menezes R, et al. Factors associated with gastrointestinal parasite infection in dogs in Rio de Janeiro, Brazil. Prev Vet Med. 2009;91:234–240.
12. Cayce KA, Scott CM, Phillips CM, et al. What is your diagnosis? Cutaneous larva migrans. Cutis. 2007;79:429, 435–436.
13. https://www.cdc.gov/parasites/zoonotichookworm/health_professionals/index.html CDC - Zoonotic Hookworm - Resources for Health Professionals. Published September 8, 2021. Accessed 17 September, 2023.

14. Rather S, Aslam A, Younus F. Dermoscopy Before and After Treatment of Cutaneous Larva Migrans: Through the Dermoscope. Indian Dermatol Online J. 2022 Sep 5;13(5):690-694. doi: 10.4103/idoj.idoj_577_21. PMID: 36304643; PMCID: PMC9595163.
15. Perman MJ. 10-year-old boy presents with a pruritic, blistering eruption. Infect Dis Child. 2010;23:64.
16. Kacprzak E, Silny W. Cutaneous larva migrans syndrome in travelers returning from warm climate countries. Adv Dermatol Allergol Dermatol Alergol. 2004;21:24–29.
17. Hochedez P, Caumes E. Hookworm-related cutaneous larva migrans. J Travel Med.2007;14:326–333.
18. Bouchaud O, Houzé S, Schiemann R, et al. Cutaneous larva migrans in travelers: a prospective study, with assessment of therapy with ivermectin. Clin Infect Dis Off Publ Infect Dis Soc Am. 2000;31:493–498.
19. Shenefelt PD, Shenefelt DA. Spiritual and religious aspects of skin and skin disorders. Psychol Res Behav Manag. 2014;7:201–212.
20. Montresor A, Stoltzfus RJ, Albonico M, et al. Is the exclusion of children under 24 months from anthelmintic treatment justifiable? Trans R Soc Trop Med Hyg. 2002;96:197–199..