Scientific Research Publishing

Case Reports in Clinical Medicine, 2024, 13, 353-357
https://www.scirp.org/journal/crcm
ISSN Online: 2325-7083
ISSN Print: 2325-7075

A Case Report on Cutaneous Larva Migrans (CLM)

Fredrick Sinyinza[1], Charles Lukanga Kimera[2*], Linda Ndesipandula Lukolo[3]

[1]Department of Maternal & Child Health, Paediatrics, School of Medicine, University of Namibia, Windhoek, Namibia
[2]Department of Obstetrics & Gynaecology, Onandjokwe Intermediate Hospital, Ministry of Health & Social Services, Windhoek, Namibia
[3]Department of Community and Family Medicine, School of medicine, University of Namibia, Windhoek, Namibia
Email: *kimerassuuna@gmail.com

How to cite this paper: Sinyinza, F., Kimera, C.L. and Lukolo, L.N. (2024) A Case Report on Cutaneous Larva Migrans (CLM). *Case Reports in Clinical Medicine*, **13**, 353-357.
https://doi.org/10.4236/crcm.2024.139043

Received: July 27, 2024
Accepted: September 2, 2024
Published: September 5, 2024

Abstract

Cutaneous larva migrans (CLM) is a zoonotic hookworm infection of dogs and cats commonly found in low-income countries in the tropical and subtropical regions and travellers to these regions. It is caused by invasion of the skin by the parasitic larvae of hookworms which, after entry, move under the skin causing an inflammatory reaction resulting in a single or multiple tracks. Patients commonly present with a progressive, itchy, erythematous serpiginous skin rash, affecting the feet, although it can affect any other parts of the body. The diagnosis is mainly clinical, based on history and physical examination. Treatment of this condition can effectively be achieved with either albendazole or ivermectin. We present a case of a 7-year-old boy who was diagnosed with CLM after presenting to the hospital with a history of a progressive itchy rash with tracks on the left foot. Although CLM is a self-limiting disease, it causes a lot of suffering and, therefore, it is of public concern. There is a need to increase awareness of this disease among health workers, and to implement and promote preventive measures against the disease since the cause is known.

Keywords

Cutaneous Larva, Larva Migrans, Zoonosis, Tropical Disease, Pruritus, Hookworm, Creeping Eruption

1. Introduction

Cutaneous larva migrans (CLM) is a zoonotic disease of the skin. The hookworms that cause the disease are primarily found in dogs and cuts. Common species of these hookworms (Nematodes) include *Ancylostoma braziliense* and *Ancylostoma*

caninum. Their eggs are passed in these petty animas' faeces and hatch in warm, shady, moist, sandy soils. Humans are secondarily infested when they walk or play in sand/soils bear-footed [1]. Although it is distributed worldwide, it is common in low-income countries in the tropical and subtropical regions. Cases have also been reported in travellers to Africa, South America, Asia and the Caribbean [2] [3].

The disease presents as a serpiginous eruption, usually confined to the skin of the feet [4][4], although it can occur anywhere on exposed body parts. Cases involving other parts of the body like buttocks, thighs and tongue, have been reported [5] [6]. The cutaneous presentation is due to a hypersensitivity reaction to the worm larvae, and its secretions. Since the larvae cannot penetrate the epidermal basement membrane of human skin, they wander in the epidermis and are not able to complete their life cycle. These larvae may live for weeks or months before they naturally die. As they move through the skin, they leave a serpiginous like lesions also known creeping eruptions, that may later become infected with bacteria. The diagnosis of cutaneous larva migrans (CLM) is based on the history and physical examination [7].

We present a case of CLM in a 7-year-old boy who presented to the outpatient department of a rural district hospital with a serpiginous lesion on left foot.

2. Case Summary

A 7-year-old boy presented with a severe itchy sensation on the left foot for three days. Thereafter, the affected area developed a dark linear discoloration that was progressive and associated with intense itching and scratching. There was no history of any insect bite or injury. The boy was growing normally, and he had received all the immunisations for his age. The family lived in a densely populated peri urban area of Rundu, in the Kavango East region of Namibia. On questioning it was found that there weredogs at home and the boy walked and played with his peers in sand barefoot.

On general examination, the boy appeared well nourished and appropriate for his age, and he was not in any obvious distress. He was not pale and had no lymphadenopathy. His weight was 19.5 Kg, and all the systems were essentially normal. On local examination of the feet, there was an erythematous creeping lesion that was palpable from the upper surface of the left foot, medially, to its sole (**Figure 1**). The lesion was linear and non-tender. There was some oedema over the affected skin.

Full blood count was normal, no serological tests or biopsy were performed. A clinical diagnosis of CLM was made. Clinical history ruled out an inflammatory reaction to insect bite. He was given Albendazole 400 mg tablets once daily for three days and an antihistamine to alleviate the itching. After a week the itchiness disappeared, and the lesion had started to fade. The child was followed for six weeks, and by the end of this period the lesions had completely disappeared and he was discharged from the clinic.

Figure 1. Trac-like erythematous creeping eruption on left foot of a 7-yearl-old boy.

3. Discussion

Cutaneous larva migrans is a zoonotic disease caused by the larvae of hookworms (Nematodes), common species being *Ancylostoma braziliense* and *A. caninum*. They are known to produce long lasting skin eruptions in humans. This condition is common in the tropics and subtropical regions. Travellers or tourists to tropical regions may also get the disease when they get into contact with the causative nematode larvae [8]. The main hosts for these hookworms are dogs and cats. Susceptive animals become infested by grooming their feet, or by sniffing at contaminated faeces or soil. The larvae develop into adult hook worm stage in the small intestine of these animals.

When the infected animals deposit their faeces in moist soils/sand, eggs hatch into larvae usually 2 to 9 days. Humans, particularly children, get infested when they walk or play bear footed in the infested sand/soils. The larvae, after penetrating the skin, fail to enter the blood stream or lymphatic system. They instead, burrow below the corium of the skin and creep in the subcutaneous layer creating tunnels seen as elevated linear lesions on physical examination, see **Figure 1** above. Papules develop at the site of the entry of the larvae. The overlying skin appears erythematous with serpiginous or linear track which is usually very itchy [9]. Vesicles may form along the line and scaling sometimes develops as lesions age. The immune response to CLM and path of larval migration are responsible for the formation of tracks and the itchiness. Although the lesions can affect any parts of the body, they commonly affect the skin of the dorsum of the feet and sometimes on the buttocks and thighs [10]. The eruption generally disappears after one to two months but may persist for months.

The incubation period of the disease, that is from the time larva penetrates the skin to the development of symptoms, is usually from few days to a month. The diagnosis of CLM is usually clinical, and patients are suspected to have a disease when they present with a progressive itchy erythematous and serpiginous lesion

[8]. In some patients, Laboratory results may show peripheral eosinophilia and increased immunoglobulin E (IgE) levels on total serum immunoglobulin determinations [1]. This lab finding is also found in insect bites, tinea corporis, contact dermatitis and larva currens (*Strongyloides stercoralis*), among others. These conditions should be considered in the differential diagnosis of CLM [11].

CLM infection is commonly a self-limiting condition with complete healing occurring at the 5th or 6th week after the onset of the disease as the larvae die off. However, treatment is necessary because symptoms of intense itchiness and skin lesions are worrying and interfere with the daily activities of patients. Albendazole, a third-generation heterocyclic anthelmintic drug, is the drug of choice for treatment of CLM [12]. This drug has been used for many years to treat intestinal helminthiases. It is usually given once a day for three consecutive days. Ivermectin has also been used as an oral single dose with good results. Other treatments used include topical 10% - 15% thiabendazole solution to the affected area, although it has a limited value [3]. For the associated pruritus or itching, antihistaminic have been used. If not treated, complications like secondary infection and rarely Löffler syndrome may arise. Löffler syndrome is characterized by pulmonary infiltrates and eosinophilia, resulting into pulmonary symptoms, such as a cough [13].

Prevention of CLM is by avoiding walking barefoot on soil or sand, or avoiding contact with contaminated soil with skin by covering feet [14]. Reducing access of cats and dogs to the beaches in the tropical regions is also an important preventive intervention.

4. Conclusion

Cutaneous larva migrans (CLM) is one of the neglected non-communicable zoonotic diseases. It is predominantly common in low-income countries although it has also been reported in travellers and tourists visiting these countries. The actual burden of this disease is not known possibly due to underreporting of cases or misdiagnosis. It is a self-limiting disease but the duration of symptoms can be shortened by administration of the appropriate treatment, the antihelminth. Preventive measures include covering of feet when walking in sand, wearing of slippers or shoes, and deworming of domestic pets.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Purdy, K.S., Langley, R.G., Webb, A.N., Walsh, N. and Haldane, D. (2011) Cutaneous Larva Migrans. *The Lancet*, **377**, 1948. https://doi.org/10.1016/s0140-6736(10)61149-x

[2] Kuna, A., *et al.* (2023) Cutaneous Larva Migrans as a Frequent Problem in Travellers. *International Maritime Health*, **74**, 259-264.

[3] Kincaid, L., Klowak, M., Klowak, S. and Boggild, A.K. (2015) Management of

Imported Cutaneous Larva Migrans: A Case Series and Mini-Review. *Travel Medicine and Infectious Disease*, **13**, 382-387. https://doi.org/10.1016/j.tmaid.2015.07.007

[4] Gill, N., Somayaji, R. and Vaughan, S. (2020) Exploring Tropical Infections: A Focus on Cutaneous Larva Migrans. *Advances in Skin & Wound Care*, **33**, 356-359. https://doi.org/10.1097/01.asw.0000662248.18996.b5

[5] Ahmed, A., Hemaida, M.A., Hagelnur, A.A., Eltigani, H.F. and Siddig, E.E. (2023) Sudden Emergence and Spread of Cutaneous Larva Migrans in Sudan: A Case Series Calls for Urgent Actions. *IDCases*, **32**, e01789. https://doi.org/10.1016/j.idcr.2023.e01789

[6] Apanga, S. and Ziem, J. (2021) An Unusual Presentation of Recurrent Creeping Eruption on the Tongue of a Child. *Academia Letters*, Article 1460. https://doi.org/10.20935/al1460

[7] Brenner, M.A. and Patel, M.B. (2003) Cutaneous Larva Migrans: The Creeping Eruption. *Cutis*, **72**, 111-115.

[8] Blackwell, V. and Vega-Lopez, F. (2001) Cutaneous Larva Migrans: Clinical Features and Management of 44 Cases Presenting in the Returning Traveller. *British Journal of Dermatology*, **145**, 434-437. https://doi.org/10.1046/j.1365-2133.2001.04406.x

[9] Ryguła, A., Kowalski, M., Hryncewicz-Gwóźdź, A., Maj, J. and Jankowska-Konsur, A. (2023) Cutaneous Larva Migrans—Case Report and Literature Review. *Family Medicine & Primary Care Review*, **25**, 367-370. https://doi.org/10.5114/fmpcr.2023.130099

[10] Veraldi, S., Persico, M.C., Francia, C., Nazzaro, G. and Gianotti, R. (2013) Follicular Cutaneous Larva Migrans: A Report of Three Cases and Review of the Literature. *International Journal of Dermatology*, **52**, 327-330. https://doi.org/10.1111/j.1365-4632.2012.05723.x

[11] Rodriguez-Morales, A.J., González-Leal, N., Montes-Montoya, M.C., Fernández-Espíndola, L., Bonilla-Aldana, D.K., Azeñas-Burgoa, J.M., *et al.* (2021) Cutaneous Larva Migrans. *Current Tropical Medicine Reports*, **8**, 190-203. https://doi.org/10.1007/s40475-021-00239-0

[12] Leung, A.K.C., Barankin, B. and Hon, K.L.E. (2017) Cutaneous Larva Migrans. *Recent Patents on Inflammation & Allergy Drug Discovery*, **11**, 2-11. https://doi.org/10.2174/1872213x11666170110162344

[13] Hajra, K., Chakraborty, U. and Chandra, A. (2023) Löffler's Syndrome Associated with Cutaneous Larva Migrans. *Tropical Doctor*, **54**, 209-213. https://doi.org/10.1177/00494755231217009

[14] Rosenthal, P.J. (2022) Cutaneous Larva Migrans (Creeping Eruption). In: Papadakis, M.A., McPhee, S.J., Rabow, M.W. and McQuaid K.R., Eds., *Current Medical Diagnosis and Treatment* 2022, McGraw-Hill Education, 111-115. https://accessmedicine.mhmedical.com/content.aspx?bookid=3081$ionid=258981242