



A Case Report of Cutaneous Larvae Migrans with Associated Fungal Superinfection in Uyo, Nigeria

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Authors' contributions

This study was carried out by both authors. Author CDA wrote the protocol and design. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aims: To describe a case of Cutaneous Larvae Migrans (CLM) with associated fungal and bacterial superinfection seen in the Tuberculosis and Infectious Disease Unit of University of Uyo Teaching Hospital.

Presentation of Case: A 31-year old male reported to the Tuberculosis and Infectious Disease Unit with a history of creeping eruptions, itching and right foot swelling following gardening. Investigations revealed associated bacterial and fungal super infection. Symptoms resolved after treatment with Albendazole, antibiotics and antifungals.

Discussion: Although CLM is self-limiting, non- recognition and home treatment using local herbal remedies may lead to associated superinfection, mask the presentation and lead to delayed diagnosis.

Conclusion: CLM is not frequently reported in the tropics and primary health care workers are likely unfamiliar with its presentation, which could delay the treatment. Associated use of local herbal remedies lead to superinfection as seen in the index case may lead to missed and delayed

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diagnosis. This calls for increased awareness of the condition and its treatment for primary care workers.

Keywords: *Creeping eruption; cutaneous larvae migrans; fungal superinfection.*

1. INTRODUCTION

The first case described as Cutaneous Larvae Migrans (CLM) was by Lee in 1874 [1]. CLM is a tropical disease, however, it is not frequently reported in the tropics, rather it is often reported by physicians in the western countries as an illness occurring amongst traveller's returning from endemic areas. This has earned it the name traveller's itch amongst other names like creeping eruptions, plumber's itch, sand worm eruption and the most recent suggestion of Hookworm-related dermatosis [2]. It is caused by the hookworm *Ancylostoma* infecting dogs and cats. The global burden of this disease in dogs and cats is unknown [3]. Awareness of the disease is low among the general population [4]. However, the low levels of awareness does not imply low prevalence. The burden of disease is unknown and the disease is not reported regularly [3].

2. CASE PRESENTATION

A 31 year old male, was referred from a primary care centre with a 2-day history of right foot itching and right leg swelling. There was a history of moving sensation and associated swelling and itching of the right upper limbs. He was reported to have been working barefoot outdoors in a waterlogged yard. The household has a dog that runs freely in the yard. There was no history of fever, pulmonary or intestinal symptoms. Patient was not a known diabetic, but had a positive history of diabetes in the mother.

On examination, a swollen right foot, with dilated visible veins and gangrenous/necrotic tissue were seen. There were serpinginous eruptions and discharge from the plantar surface of the left leg. The associated intensely pruritic lesion characteristic of CLM was noted [5]. However, the clinical picture was altered by the gangrenous-like ulceration between the 3rd and 4th inter digital clefts of the right foot (Figs. 1a, 1b and 2). Similar serpinginous eruptions were seen in the interdigital clefts in the right upper limbs (Fig. 3). Patient admitted to a history of local herbal remedies applied at the site of the lesion.

The clinical picture of swollen right foot, with dilated visible veins gangrenous-like necrotic tissue led to a further investigations to rule out diabetes and fungal infection. The results showed that fasting blood sugar (3.6 mmol/l) was normal, wound swab for microscopy, culture and sensitivity (m/c/s) yielded a mixed growth of *Pseudomonas aeruginosa* and *Staphylococcus aureus*. Retroviral serology for HIV was negative, Skin snip showed no microfilaria for both night and day. Skin scrapping and microscopy showed presence of epithelial cells, in keeping with *Tinea pedis*.



Fig. 1a. The affected foot showing serpinginous eruption and discharging bullae

A final diagnosis of CLM with bacterial and fungal superinfection was made. Albendazole 400 mg bd for 5 days, antibiotics and an anti-itch cream was also administered. He was referred to and co-managed with Dermatology Clinic. He received Ketoconazole tablets 200 mg daily and clotrimazole cream. Patient recovered and was seen two weeks later. However, he was still itching and the anti histamine was continued.



Fig. 1b. The affected foot showing serpinginous eruption and discharging bullae



Fig. 2. The right foot showing gangrenous-like /necrotic tissue



Fig. 3. Serpinginous tracking seen in the upper limb

3. DISCUSSION

Aetiologically, hookworm-related CLM (HrCLM) is found to be the commonest cause of creeping eruptions [6]. The parasite's eggs are passed from animal faeces into warm, moist soil or sand, where the larvae hatch [7]. Transmission occurs when the skin comes in direct contact with contaminated soil or sand. In humans, the disease is limited to the epidermis because the larvae are unable to penetrate the basement membrane to invade the dermis. So the larvae are forced to wander in the epidermis creating the creeping eruptions. This leads to intense itching and subsequently excoriations. Scratching facilitates bacterial super infection of the lesion [6]. HrCLM is a self-limiting disease, but the creeping eruptions and intense pruritus may persist for months [2].

Although the diagnosis is essentially clinical, some cases could be missed because health workers are not familiar with the disease. The degree of misdiagnosis or inappropriate treatment has been seen to be as high as 58% in travelers returning from endemic areas with CLM [2]. In the tropics, prompt diagnosis and treatment can be delayed by the use of local herbal remedies. Application of these herbal remedies could mask the clinical picture as seen in the index case. However, the serpinginous lesion and associated intensely pruritic lesion is a characteristic feature of CLM [5]. Although rare, investigation should also be performed for systemic signs including peripheral eosinophilia, migratory pulmonary infiltrates and increased IgE levels.

It is also possible that some cases are missed because health workers are not familiar with the disease. The index case highlights the need for high index of suspicion, early recognition and prompt diagnosis of the disease in endemic countries.

4. CONCLUSION

CLM is not frequently reported in the tropics and thus is unlikely to be recognized by health care workers, especially the primary care workers, thus delaying the treatment. Low levels of awareness of NTDs including CLM in Nigeria could lead to misdiagnosis and delayed treatment. The use of local herbal remedies to treat associated symptoms may lead to superinfection as seen in the index case. This calls for increased awareness of the condition and its treatment for primary care workers.

CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

The authors obtained ethical approval for publication of this case from the ethical committee of the University of Uyo Teaching Hospital. A scanned copy of the approval granted is attached.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Caumes E, Danis M. From creeping eruption to hookworm-related cutaneous larva migrans. *The lancet Infectious Diseases*. 1993;4(11):659-60.
2. Hochedez P, caumes E. Hookworm-related cutaneous larva migrans. *Journal of travel medicine*. 2007;14(5):326-33.
3. Prevention cfdca. Zoonitic hookworms; epidemiology and risk factors Atlanta USA: cdc; 2012. [cited 2012 April 12 2015]. Available:<http://www.cdc.gov/parasites/zoonotichookworm/epi.html>
4. Olamiju OJ, Olamiju FO, Adeniran AA, Mba IC, Ukwunna CC, Okoronkwo C, et al. Public awareness and knowledge of neglected tropical diseases (ntds) control activities in abuja, nigeria. *Plos Negl Trop Dis*. 2014;8(9):e3209.
5. Davies HD, Sakuls P, keystone JS. Creeping eruption: A review of clinical presentation and management of 60 cases presenting to a tropical disease unit. *Archives of Dermatology*. 1993;129(5):588-91.
6. Vanhaecke C, Perignon A, Monsel G, Regnier S, Paris L, Caumes E. Aetiologies of creeping eruption: 78 cases. *British Journal of Dermatology*. 2014;170(5):1166-9.
7. Feldmeier H, Schuster A. Mini-review: Hookworm-related cutaneous larva migrans. *Eur J Clin Microbiol Infect Dis*. 2012;31(6):915-8. English.

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