

Case Study

A CASE REPORT OF CUTANEOUS LARVAE MIGRANS IN UYO, NIGERIA

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 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. 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 (ARIAL, BOLD, 11 FONT, LEFT ALIGNED, CAPS)

The first case described as CLM was by Lee in 1874. (1) Though CLM is seen in warm climates, it is not frequently reported in these regions, 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 zoonotic hookworm in dogs and cats is not known. The burden of disease caused by these parasites is also unknown and the disease is not reported regularly.

In less developed areas of the world, dogs and cats are often free-ranging and have high rates of infection with hookworm which leads to widespread contamination of sand and soil. Thus, CLM is likely causing significant problems for the people who live in less developed parts of the world.

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.

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

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

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



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



Figure 1b The affected foot showing serpiginous eruption and discharging bullae



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



Fig. 3 Serpiginuous tracking seen in the upper limb

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73 **3. DISCUSSION**

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Aetiologically, hookworm-related CLM is found to be commonest cause of creeping eruptions. (4) CLM is caused by the migration of hookworm larvae in human skin. The parasite's eggs are passed from animal feces into warm, moist soil or sand, where the larvae hatch. Transmission occurs when skin comes in direct contact with contaminated soil or sand. In humans, the larvae are unable to penetrate the basement membrane to invade the dermis, so the disease remains limited to the epidermis.

By consequence, HrCLM is a self-limiting disease.(2) However, if not treated promptly, the skin pathology may persist for months. HrCLM is endemic in many resource-poor communities in the developing world. In high-income countries, HrCLM occurs sporadically or in the form of small epidemics.(5) Travelers account for the great majority of cases seen by health-care professionals in high-income countries. Transmission occurs when naked skin comes into contact with contaminated soil. Exposure may also occur indoors. Exceptionally, larvae may be transmitted through fomites. The first clinical sign is a small reddish papule. Thereafter, the characteristic serpinginous, slightly elevated, erythematous track becomes visible. Itching becomes more and more intense. Excoriations induced by scratching facilitate bacterial super infection of the lesion.(4)

Although the diagnosis is essentially clinical, the clinical picture could be masked by use of herbal remedies as seen in the index case. However, the characteristic serpinginuous lesion and associated intensely pruritus lesion is a characteristic feature of CLM.(3) Though the diagnosis is usually clinical, the index case highlights the need for high index of suspicion and need for early recognition and prompt diagnosis in endemic countries.

96 **4. CONCLUSION**

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98 CLM is not frequently reported in the tropics and thus is unlikely to be recognized by
99 health care workers, especially the primary care workers, thus delaying the
100 treatment. The use of local herbal remedies to treat associated symptoms may lead
101 to superinfection as seen in the index case. This calls for increased awareness of
102 the condition and its treatment for primary care workers.

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104 **CONSENT (WHERE EVER APPLICABLE)**

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106 All authors declare that written informed consent was obtained from the patient for
107 publication of this case report and accompanying images. A copy of the written consent is
108 available for review by the Editorial office/Chief Editor/Editorial Board members of this
109 journal.

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112 **ETHICAL APPROVAL (WHERE EVER APPLICABLE)**

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

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119 **REFERENCES**

- 120 1. CAUMES E, DANIS M. FROM CREEPING ERUPTION TO HOOKWORM-
121 RELATED CUTANEOUS LARVA MIGRANS. THE LANCET INFECTIOUS
122 DISEASES.4(11):659-60.
123 2. HOCHEDÉZ P, CAUMES E. HOOKWORM-RELATED CUTANEOUS
124 LARVA MIGRANS. JOURNAL OF TRAVEL MEDICINE. 2007;14(5):326-33.
125 3. DAVIES HD, SAKULS P, KEYSTONE JS. CREEPING ERUPTION: A
126 REVIEW OF CLINICAL PRESENTATION AND MANAGEMENT OF 60 CASES
127 PRESENTING TO A TROPICAL DISEASE UNIT. ARCHIVES OF DERMATOLOGY.
128 1993;129(5):588-91.
129 4. VANHAECKE C, PERIGNON A, MONSEL G, REGNIER S, PARIS L,
130 CAUMES E. AETIOLOGIES OF CREEPING ERUPTION: 78 CASES. BRITISH
131 JOURNAL OF DERMATOLOGY. 2014;170(5):1166-9.
132 5. FELDMEIER H, SCHUSTER A. MINI REVIEW: HOOKWORM-RELATED
133 CUTANEOUS LARVA MIGRANS. EUR J CLIN MICROBIOL INFECT DIS. 2012
134 2012/06/01;31(6):915-8. ENGLISH.

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