

ORIGINAL ARTICLE

CREEPING ERUPTION: AN IMAGE TO REMEMBER

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Keywords

cutaneous larva migrans, hookworms, creeping rash, serpiginous track

A 2-years-old female patient, previously healthy, presented with an intense pruritic rash in the gluteal region. The skin lesion started as a single pustule, growing into a creeping migratory track within three days. No fever or other symptoms were reported.

The patient lived in Portugal, in an apartment in an urban area, without contact with any animals. Symptoms appeared during spring season. At the time, the child and her family stayed preferably at home and avoided public spaces, since the country was in lockdown due to the COVID-19 pandemic.

However, the child had traveled to Brazil three months earlier, where she had frequent contact with animals, played in the soil at parks and had been in contact with sand at a few beaches. The child's cohabitants were always asymptomatic.

Physical examination revealed an erythematous and elevated eruption, as a serpiginous track (Figure 1) measuring 30x3 mm, on the gluteal region. There were no other skin lesions, no lymphadenopathy or other physical findings.

The diagnosis of cutaneous larva migrans (CLM) infection was considered as the probable cause of the lesions. The patient was treated with oral Albendazole 400 mg/day, for three days. The pruritus resolved right at the end of treatment and the skin rash faded completely in seven days.

Figure 1. Serpiginous track on the gluteal region, measuring 30x3 mm.



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ARTICLE HISTORY

Received 14 April 2022

Accepted 21 May 2022

What is the diagnosis?

Cutaneous larva migrans (CLM) is a dermatosis typical of the tropical and subtropical areas of South America, Southeast Asia and Africa. It is caused by zoonotic transmission of hookworm larvae, most frequently *Ancylostoma brasiliense* and *Ancylostoma caninum*, cat and dog parasites respectively.¹ The life cycle of these hookworms begins when its eggs pass through the intestines of the animal hosts, being eliminated with the feces.^{1,2} The eggs hatch in the soil, especially in sand, in warm, moist and shady areas.³ The warm temperatures associated with rainy days and humid soil favor the larval growth.⁴ The most common reservoir for the larvae are beaches.³ When the human skin contacts directly with the infected soil, the larvae can secrete hyaluronidases and proteases to enable them to penetrate in the epidermis.⁵ Along with the degree of contamination of the soil, the duration of contact with it also increases the risk of infection.⁴ The majority of larvae species that cause CLM are incapable of reaching the dermis.⁶ The clinical findings are a result of the immune response to the larvae migration pattern in the epidermis. The diagnosis of CLM is clinical, exclusively through personal history and physical examination. The presence of a pruritic erythematous serpiginous rash is characteristic of CLM. This rash evolves into a track, slightly elevated, progressing in length according to the larval migration (rate of 1-2 cm per day). The most common anatomic areas affected are the feet, buttocks and thighs.¹ In most cases, the rash appears 1-5 days after the larvae penetration. However, previous studies have demonstrated that the incubation period may last longer than a month.¹ The differential diagnosis of migrating pruritic rash includes other infections, such as strongyloidiasis (*larva currens*) or gnathostomiasis. Although, *Strongyloides stercoralis* also causes a serpiginous rash, more frequently in the perianal area, its migration rate is very high (1-5 cm per hour). The rash present in gnathostomiasis is poorly demarcated. There are no useful complementary exams to establish the diagnosis of CLM. Eosinophilia peripheral may be present, but it is unhelpful since the larva is usually located away from the edge of the track.^{1,7} In the case we described, the rash morphology and its progression were consistent with CLM. The location of

the rash, in the buttock, seems to reflect an exposed area of the skin when the child played in the sand. Most cases of CLM described in high-income non-tropical countries, reflect a disease acquired during travel. In this case, the children had recently traveled to a country where CLM is very frequent and had been in direct contact with the soil and the beach sand. We believe that hypothesis is more likely, although it would imply a longer incubation period than previously described. Although CLM can occur sporadically in the temperate zones in the warmer months, that did not appear to be the case at that time of the year in Portugal. Humans are only accidental hosts for most of the hookworm larvae that cause CLM. In that case, they can't enter human's lymphatic or venous system and complete their life cycle. The infection usually resolves without treatment in 5 to 6 weeks.⁸ Although CLM is a self-limited disease, the decision to implement treatment can be made to avoid morbidity. In this case, our goal was to provide a fast relief of the pruritus, reduce the duration of the disease, and avoid other complications. CLM complications include vesiculobullous lesions, folliculitis, secondary impetigo, and cellulitis. In returning travelers with CLM, secondary bacterial infection occurred in up to 8% of cases.¹ Oral treatment with **albendazole** was well tolerated and successful in the resolution of symptoms. It is important to raise awareness of CLM, especially due to the rising number of families with young children traveling to and from tropical and subtropical areas. Pediatricians who work in areas where CLM is uncommon should be able to identify this condition. The visual recognition of a serpiginous creeping rash, along with the epidemiological context, allow clinicians to establish diagnosis and begin a prompt and effective treatment.

Compliance with ethical standards

Funding: None

Conflict of Interest: None

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