

Larva Migrans: Management for the First Contact Physician and Review of the Current Literature

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ABSTRACT

Cutaneous larva migrans is a skin infection caused by the subcutaneous migration of larvae of different species of nematodes. Also called Creeping eruption or serpiginous eruption, it is an endemic skin parasitosis of tropical and subtropical areas with hot and humid climate. In our environment it is unusual, predominating in individuals who have come to these areas, although there are rare cases of acquisition in European countries. It was first described by Lee in 1874 and since then its prevalence has been increasing, affecting millions of people each year.

It is an endemic process in tropical and subtropical areas. Due to growing immigration and booming travel to these geographical areas, its prevalence in developed countries has increased in recent decades.

For all these reasons, we believe it appropriate to disclose the existence of this parasitic dermatosis among dermatologists and primary care physicians.

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INTRODUCTION

Cutaneous larva migrans infection is a zoonotic infestation caused by the penetration and migration into the epidermis of larvae in animals such as dogs and cats. It is endemic in areas with a tropical climate and is frequent in patients with a history of risk areas, usually in coastal areas.¹

Human infection is usually accidental, which occurs when coming into contact with sand or soil contaminated with animal droppings infested with nematodes of the *Ancylostoma braziliense* type, which penetrate through the skin. It is more frequent in the lower extremities, which are the main ones exposed to this method of transmission.²

Individuals at high risk of acquiring it are travelers from tropical regions, children, barefoot swimmers, and people who expose their skin to contaminated soil during their work. It occurs most frequently in the lower extremities.²

LIFE CYCLE

The life cycle of the larval migration begins once the parasite eggs have been shed in the feces of the previous host. Once

in the soil (with an average hatching time of 24 hours), what are known as "rhabditiform larvae" emerge, which are not considered their infective form; it is not until they mature into "filariform larvae" that they are infective. for the human being and that can enter it through the skin.³

Reddish papules appear 24–48 h after the larva penetrates human skin, which after a few days become linear serpiginous intraepidermal tracts, 2–4 mm wide, erythematous, edematous, and pruritic. Depending on the species, the larva extends from the end, from several millimeters to a few centimeters daily. The pruritus can start almost immediately after the penetration of the larva and there is speculation about the role of certain substances released by the larva on the sensitive nerve fibers. It rarely causes pain.^{3,4}

The lesions begin with a papule that evolves into sinuous or serpiginous paths, bullous, with desquamation and erythema; They are very pruritic and secondarily they can be impetiginized, which at this point are already a relevant complication.^{5,6}

DIAGNOSIS.

The diagnosis is clinical and is supported by the epidemiological history of trips to endemic areas (such as beaches or areas with a climate that favors the appearance of this entity), which helps to differentiate it from other dermatoses such as scabies, tinea corporis, and contact dermatitis.⁷

The characteristic skin lesions is a serpiginous rash that is almost pathognomonic for this disease. Once this lesion has been identified, an epiluminescence microscopy (in dermoscopy) is very useful to be able to visualize the larva and be able to make the definitive diagnosis.⁸

Most of the findings found in dermoscopy can be described as: segmental brown-brown areas without structure (which correspond to the body of the larva) as well as the presence of punctate vessels that correspond to the tunnel generated by the passage of the larva.⁹

Even with the use of confocal microscopy, structures described as an "interrupted honeycomb" have been identified, which is also a variant of the path of the larva through the dermis; however, this type of observation is very expensive and not always available.¹⁰

A complete blood count can report the presence of eosinophilia up to 70% as well as elevated levels of IgE. Other laboratory studies to support the diagnosis are enzyme-linked immunosorbent assay (ELISA), Western blot and BpAG1 obtained from *Baylisascaris procyonis* itself) which also constitute useful tools to differentiate between some causal species. The use of real-time PCR targeting subunit 2 of the cytochrome oxidase gene has even been described, but it has only been shown to be useful in species of the genus *Baylisascaris*.¹⁰

Nonspecific eosinophilia is found in 10-30% of the cases, which is nonspecific; however, if the eosinophil levels are very high, it should alert us to the possible existence of visceral migration.¹¹

Skin biopsy is uneconomical in most cases and is not routinely recommended. Some of the findings that can be found in histopathological reports is the presence of the parasite trapped in the follicular canal, in the stratum corneum or the dermis itself, which is accompanied by an eosinophilic infiltrate.¹²

DIFFERENTIAL DIAGNOSES

In differential diagnoses are superficial thrombophlebitis, lichen striatum, scabies, tinea pedis, fascioliasis, herpes zoster, myiasis migratoria, and finally another entity called "migrating hair" described since 1957 and of which just over 20 cases have been reported in Literature. Clinically, a groove is observed surrounded by an erythematous halo with a single direction (unlike larva migrans that presents multiple erratic paths) and sometimes a thin black line is observed through the tunnel. Itching does not exist or is mild. This entity is generated by the presence of a follicular sheath that protrudes

through the superficial epidermis or dermis, and can be confused with larva migrans when the lesions are located on the feet, although it has been observed anywhere on the body surface. The biopsy reveals a hair that crosses the entire mid-dermis, surrounded by a dense inflammatory infiltrate made up of neutrophils, histiocytes, and lymphocytes, and a granulomatous foreign body reaction is frequently found.¹³

TREATMENT

Without treatment, the disease self-limits to 2-8 weeks, although there are cases described in which it persists for up to a year. The treatment is simple and allows the intense itching to be eliminated in a short time and prevents its spread to other areas of the body, reducing the possibility of complications.^{14,15}

Among the oral treatments, due to its safety and efficacy, ivermectin at a dose of 200µg per kilogram of weight in a single dose is of choice. It reaches remission rates close to 100%. A special consideration is that it is contraindicated in children under 5 years of age or weighing less than 15kg, during pregnancy and lactation. In all these cases, as well as in countries where ivermectin is not available, the treatment of choice is albendazole, at a dose of 400 mg daily for 5-7 days. In light infestations, a 3-day regimen may suffice.^{16,17,18}

CONCLUSIONS

Despite the fact that the clinical image is so characteristic, on many occasions an opportune diagnosis is not reached, which delays treatment, so it is important to raise awareness among health personnel and implement prevention measures when traveling to the beach (use of sandals, not lying down or burying yourself in the sand, avoiding that towels and clothes touch the sand), as well as deworming campaigns for dogs and cats and avoiding their defecation in the open.

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