



ORIGINAL RESEARCH PAPER

Pediatrics

A CASE REPORT OF CUTANEOUS LARVA MIGRANS

KEY WORDS:

Dr. E Naveen Goud*

3rd Year Post Graduate M. D Pediatrics Apollo Institute Of Medical Sciences & Research, Chittoor, Andhra Pradesh. *Corresponding Author

Dr. G Latha Sree

Senior Resident M. D Pediatrics Apollo Institute Of Medical Sciences & Research, Chittoor, Andhra Pradesh.

ABSTRACT

Cutaneous larvae migrans or creeping eruption is a serpiginous cutaneous eruption caused by the accidental penetration and migration of animal hookworm (nematode) larvae through the epidermis and subcutaneous tissue. The infection occurs most frequently in warmer climates and is associated with pruritus and burning sensations. We report a case of 8 years female child with vesicular lesion on left ankle progressing into a serpiginous track on the skin surface associated with itching. Treatment with albendazole led to successful resolution of lesions within 10 days.

BACKGROUND

Cutaneous larva migrans (CLM), also having been termed for the clinical sign of creeping eruption, is an infectious syndrome caused by multiple types of hookworms. This is most commonly transmitted by animal feces depositing eggs in the soil, with larvae entering humans through direct contact with skin. Cutaneous larva migrans is distinguished from the cutaneous manifestation of Strongyloides stercoralis infection termed larva currens. The latter demonstrating fast movement through the skin. Other non-larval cutaneous migrations, including loiasis, scabies, or larva with dermal penetration, are also excluded from CLM. [1]

This disease is classically seen in warmer climates, including the southeast United States. Latin America, Southeast Asia, and Africa.

Symptomatology includes a progressive migrating serpiginous rash commonly with pruritus. While the disease can affect any exposed area, the most common location is the feet.

The natural progression of the disease is self-limited as the organisms are unable to produce a collagenase to penetrate the basement membrane and reach the gastrointestinal (GI) tract to reproduce. When treatment is given, topical thiabendazole, oral albendazole, or ivermectin are the drugs of choice. Complications often arise from secondary bacterial superinfection or complications from inappropriate empiric therapy(1),(2),(3).

Case Study

A 8 years old female, presented to our OPD with history of fluid filled lesion on lateral aspect of left ankle for 7 days. The lesion was noticed by child incidentally while playing at home. There was no history of preceding itching, redness, or trauma on the affected site prior to the onset of lesion. Pain and burning were characteristically absent. Patient then noticed the serpiginous extension of vesicular lesion over next 3 days which extended upwardly about 2-3 cm over left ankle area. There was no history of fever, cough, weight loss, loss of appetite and night sweats before and during the disease course. There was no previous personal or family history of similar lesions.

On dermatological examination, single, well defined, edematous 2-3 cm long serpiginous tract noticed on the dorsal aspect of the left ankle. No visible oozing and crusting were noticed from the lesions. Palms, soles, and genitalia were spared. On sensory examination, cutaneous sensation was intact to all modalities. Patient was treated with oral drugs. Tab Albendazole 400 mg per oral od dose for about 5 days was given. Patient followed up after 10 days with 0 complete

resolution of lesions.



DISCUSSIONS:

Cutaneous larva migrans (creeping eruption) has a worldwide distribution with higher prevalence and endemicity in warmer tropical and sub-tropical countries such as Caribbean islands, Africa, South America, Southeast Asia, and South-Eastern United States(4). Cutaneous larva migrans is caused by the larvae of hookworms that infect domestic dogs and cats, most often Ancylostoma braziliense or A. caninum and occasionally Uncinaria stenocephala or Bunostomum phlebotomum(5). The infection is usually acquired by walking barefoot on ground contaminated with animal faeces. The larvae enter the skin and undergo process of migration with in the epidermis, producing visible tracts and intense pruritus. The parasite usually remains confined to the epidermis as it lacks collagenase, which is necessary to disrupt the basement membrane(6). Patients develop intense localized pruritus that occurs shortly after the hookworm penetrates the skin. The pruritus is associated with small vesicles and/or one or more edematous, serpiginous tracts. Each larva produces one tract and migrates at a rate of 1 to 2 cm per day ("creeping eruption") usually 2-6 days after the infection is acquired. The most frequent location is the distal lower extremities or buttocks. Other sites of involvement include the hands, thighs, and rarely perianal area(7). As larva can gain entry through multiple points, more than one lesion may occur in a patient.

The larva can survive for 2-4 weeks in the human host, the disease is usually self-limiting in around 80% cases. Occasionally, constitutional symptoms like cough, wheezing, and chest pain can occur. Pulmonary eosinophilia (Loeffler's pneumonia) can occur with severe infestation. Superimposed bacterial infections can occur due to intense pruritus and scratching. Diagnosis is mostly clinical, while histopathology is of little utility as the larvae may have migrated beyond the clinical lesion. Non-specific serological test is available for the diagnosis(8). Skin biopsy may show cavities left by the parasite within the upper epidermis with spongiosis, and a mixed dermal infiltrate composed of lymphocytes, histiocytes, and numerous eosinophils. Occasionally, collections of eosinophils may be present in the epidermis

and within hair follicles(6).

Differential diagnosis may include allergic contact dermatitis, impetigo, inflammatory tinea, scabies, myiasis, and other nematode infections such as the superficial form of gnathostomiasis.⁶ Similar creeping lesions is also seen in Larva currens which is an itchy, cutaneous condition caused by the intradermal migration of *strongyloides stercoralis*. It can be differentiated from cutaneous larva migrans by its rapid migration, perianal involvement, and wide band of urticaria. Clinically, Larva currens is characterized by serpiginous erythematous papules on the buttocks, upper thighs and lower abdomen(9). Cutaneous larva migrans is self-limiting, but the intense pruritus and prolonged course often necessitate treatment(10). It can be treated by physical modalities (surgery e.g., in creeping eruption due to *Gnathostoma sphinigerum*), cryotherapy by freezing the tracks or their ends, topical drugs and systemic therapy(11). Various topical agents such as 15% thiabendazole, 2% Gamrriexane cream, 25% piperazine citrate and metrifphonate have been tried in the treatment. Among these, thiabendazole has been found to effective in killing the larvae and alleviating symptoms but it requires repeated application, can result in an irritant reaction, and is often followed by recurrences. Oral thiabendazole is usually given in the dose of 25-50 mg per kg body weight, once or twice daily for 2-5 days but it has high incidence of side effects such as nausea, anorexia, headache, and gastrointestinal disturbances. Administration of a single 400 mg oral dose of albendazole to adults and children >2 years of age produces cure rates of 45-100%, but a dose of 400-800 mg/day in adults or 10-15 mg/kg/day (maximum of 800 mg/day) in children for 3-5 days results in more consistent cure rates of 80-100%.¹⁰ A single ivermectin dose of 12 mg in adults or 150-200 mcg/kg in children has 80-100% efficacy and it has gained favour over other drugs(12). Flubendazole, another anti-helminthic drug, in dose of 200 mg/day for 5 days, currently under experimental stage, can be a good future prospect(11).

CLM can be prevented by adequate precautionary methods to avoid contact of exposed skin with contaminated soil. Use of beach towel when lying on sand and wearing shoes can avoid exposure to the larvae. Periodic deworming of domestic cats and dogs reduces soil contamination.

CONCLUSION:

Cutaneous larva migrans or creeping eruption is caused by the invasion and migration of nematode larva in human skin after direct contact with contaminated soil. The lesions can start as vesicle and extend, thus forming a serpiginous tract due to parasitic movement within the skin layers. The lesion is intensely itchy, frequently accompanied by pain and burning. It can sometimes lead to secondary infection and Loeffler's pneumonia. Topical and oral mebendazole, commonly used for the treatment, is being replaced by oral ivermectin nowadays. This potential occupational dermatosis can be prevented by adequate hygiene, avoidance of contaminated soil and deworming of pets.

REFERENCES:

1. Heukelbach J, Feldmeier H. Epidemiological and clinical characteristics of hookworm-related cutaneous larva migrans. *Lancet Infect Dis.* 2008 May;8(5):302-9. [PubMed]
2. Jacobson CC, Abel EA. Parasitic infestations. *J Am Acad Dermatol.* 2007 Jun;56(6):1026-43. [PubMed]
3. Kincaid L, Klowak M, Klowak S, Boggild AK. Management of imported cutaneous larva migrans: A case series and mini-review. *Travel Med Infect Dis.* 2015 Sep-Oct;13(5):382-7. [PubMed]
4. Neafie RC, Meyers WM. Cutaneous larva migrans. In: Strickland GT ed. *Hunters Tropical Medicine and Emerging Infectious Diseases*, 8th ed. Philadelphia: Saunders. 2000;797-99.
5. Roest MA, Ratnavel R. Cutaneous larva migrans contracted in England: a reminder. *Clin Exp Dermatol.* 2001;26:389-90.
6. Bravo FG. Protozoa and Worms. In: Bologna JL, Schaffer JV, Cerroni L, editors. *Dermatology*. 4th ed. Elsevier. 2018;1484-88.
7. Assimwe FT, Hengge U. Other helminths: dracunculiasis, cutaneous larva migrans and trichinellosis. In: Tyring S, Lupi O, Hengge U, editors. *Tropical dermatology*. London: Elsevier. 2006;71-80.
8. Gutte R, Khopkar U. Cutaneous larva migrans (creeping eruption). *Indian*

Dermatol Online J. 2011;2:48.

9. Arora p, Arora S. Diseases caused by parasitic worms and protozoa. In: Sacchidanand S, Oberai C, Inamdar AC, editors. *IADVL Textbook of Dermatology*, 4th ed. Bhalani Publishing House. 2018;699-701.
10. Caumes E. Treatment of cutaneous larva migrans. *Clin Infect Dis.* 2000; 30:811-14.
11. Albanese G, Venturi C, Galbiati C. Treatment of larva migrans cutanea (creeping eruption): a comparison between albendazole and traditional therapy. *Int J Dermatol.* 2001;40:67-71.
12. Schuster A, Lesshaft H, Talhari S, Guedes de Oliveira S, Ignatius R, Feldmeier H. Life quality impairment caused by hookworm-related cutaneous larva migrans in resource-poor communities in Manaus, Brazil. 2011;5(11):e1355.