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Publisher Taylor & Francis

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## Journal of Agromedicine

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t792303961>

### Cutaneous Larva Migrans in a Migrant Latino Farmworker

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**To cite this Article** Conde, Jennifer F. , Feldman, Steven R. , Vallejos, Quirina M. , Quandt, Sara A. , Whalley, Lara E. , Brooks, Thanh , Cabral, Gonzalo , Fleischer Jr., Alan B. and Arcury, Thomas A.(2007) 'Cutaneous Larva Migrans in a Migrant Latino Farmworker', Journal of Agromedicine, 12: 2, 45 – 48

**To link to this Article:** DOI: 10.1300/J096v12n02\_05

**URL:** [http://dx.doi.org/10.1300/J096v12n02\\_05](http://dx.doi.org/10.1300/J096v12n02_05)

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## Cutaneous Larva Migrans in a Migrant Latino Farmworker

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**ABSTRACT.** Migrant farmworkers experience a high incidence of skin disease. This report provides information on the case history of cutaneous larva migrans in a Latino migrant farmworker. Treatment options are reviewed, and information for prevention is discussed. doi:10.1300/J096v12n02\_05 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2007 by The Haworth Press, Inc. All rights reserved.]

**KEYWORDS.** Occupational skin disease, agromedicine, sanitation, Hispanic/Latino

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Grant sponsor: National Institute of Environmental Health Sciences R01 ES012358.

Cutaneous larva migrans (CLM) is a frequently encountered skin disease in tropical and sub-tropical regions.<sup>1</sup> This “creeping eruption,” first described in 1874, has a distinct clinical presentation.<sup>2,3</sup> Cases reported in the United States often occur among persons living in coastal locations extending from New Jersey to Texas, with Florida having the highest incidence.<sup>4</sup> Physicians should be aware that the condition is endemic in the Southeast U.S. While most reported cases of CLM involve either direct exposure to contaminated sand or to an infected domestic dog or cat,<sup>5</sup> patients may be exposed to contaminated soil through farmwork and may present to occupational health workers.

CLM is caused by hookworms, intestinal parasites of domesticated animals. The larval forms of the dog and cat hookworm (*Ancylostoma braziliense*) are the most common culprits causing CLM in the U.S.<sup>3</sup> Infected animals shed eggs via feces, and humans become the accidental hosts by walking barefoot in contaminated soil or sand.<sup>1,5</sup> The larva is capable of burrowing into the unbroken epidermis or through hair follicles or sweat gland pores.<sup>5</sup> The human is a dead-end host for the larva, as the larva lacks enzymes needed to burrow through the basement membrane of the epidermis.<sup>3,4</sup>

An intensely pruritic and erythematous linear or serpiginous creeping eruption develops at a rate of approximately 1 to 3 centimeters daily as the larva migrates through the skin.<sup>3,4,6</sup> These thread-like tracks are commonly slightly raised and about 2 to 4 millimeters in width.<sup>4</sup> The distinct clinical presentation can become skewed if complicated by impetiginized, eczematous, vesiculobullous, or allergic processes.<sup>1-3</sup> The typical eruption begins within one to six days after exposure, although in rare instances, larva may remain dormant for several months before migrating. The eruption is self-limited usually lasting no longer than eight weeks, except in rare instances where re-exposure is suspected.<sup>4</sup>

### CASE

A 38-year-old Guatemalan male presented to a clinic in North Carolina where migrant

farmworkers were seen as part of a clinical investigation conducted to assess occupation-related skin diseases. He reported that he had worked in agriculture in the U.S. for eight years. Data were collected both through detailed standard questionnaires and photographs. Photographs were sent electronically to a dermatologist at Wake Forest University School of Medicine for consultation on diagnosis and treatment.

The patient presented with a one week history of an intensely pruritic rash on the dorsal surface of the right foot (Figure 1). He denied any pain or swelling. He described his pruritus as severe, but not limiting his daily activities including cultivating and harvesting tobacco. There was a serpiginous eruption of the dorsal foot and ankle. There were also scaly changes of the sole consistent with coexistent tinea infection. The diagnosis of CLM was made by the clinic staff and was confirmed by the dermatologist.

The patient gave a history of occasionally working in the fields without shoes, although the frequency of working barefooted was not obtained. No other person in the clinic population was identified with CLM. The clinic health care provider prescribed mebendazole 200 mg twice a day for four days. The patient did not return to the clinic for a follow-up visit.

FIGURE 1. Erythematous, serpiginous eruption on dorsal right foot and ankle. Also evident is tinea pedis infection which was treated as a separate entity (worker lived in a camp and shared a shower with seven others).



## DISCUSSION

The majority of reported cases of CLM in the U.S. are from the endemic areas of the Southeast. The majority of imported cases are among travelers visiting Africa, Southeast Asia, the Caribbean, and Central and South America.<sup>3</sup> However, this entity can be misdiagnosed when persons do not present with a recent history of travel.

It is possible that this patient contracted this larva in the U.S. or in Guatemala prior to migrating to the U.S. The interview and skin exam were conducted in mid-August of 2006. The majority of farmworkers come to North Carolina at the beginning of the agricultural season, in early June. A mean incubation period of 16 days,<sup>7</sup> and the patient being interviewed more than a month into the agricultural season, make Guatemalan origin of the infection less likely. Whether contracted here or in Latin America, patients with CLM may present to clinic workers in the U.S.

Many workers in the Southeast U.S. have potential exposure to contaminated soil and may be susceptible to developing CLM, especially if working without shoes. Most migrant farmworkers do wear shoes while working.<sup>8</sup> However, a few farmworkers wear sandals while working. Longitudinal survey data collected from a sample of 304 migrant farmworkers in North Carolina during 2005 indicates that they did not wear closed-toe shoes while working about 1.5% of the time. Moreover, many farmworkers wear sandals during non-work hours, and migrant residential camps often lack adequate sanitation.<sup>9,10</sup> Farmworkers should be encouraged to wear socks and shoes to protect their feet from contact with soil to avoid this parasitic infection while working. Efforts to improve sanitation of farmworker camps should continue.

In this reported case, the clinical appearance was typical of CLM, and the diagnosis was easily made based on its distinct clinical presentation. The most common site of presentation for CLM is the foot followed by the buttock, back, and thigh.<sup>6</sup> Systemic signs such as peripheral eosinophilia and Loeffler's pneumonitis can be associated, but are rare. The differential diagnosis for CLM among farmworkers may include scabies, tinea, leishmaniasis, contact der-

matitis, erythema chronicum migrans, migratory myiasis, larva currens, gnathostomiasis, and loiasis.<sup>3,4</sup> Treatments of choice include both oral and topical thiabendazole, oral albendazole, and oral ivermectin.<sup>5</sup> Oral thiabendazole is dosed 25 to 50 mg/kg once or twice daily for two to five days. Alternately, it can be dosed weekly for a total of four doses, or can be given in a 500 mg chewable tablet four times a day for five days. Gastrointestinal intolerance is a significant limitation to its use. Topical thiabendazole 10% cream is prepared by crushing a 500mg tablet into five grams of a water soluble cream. The topical treatment lacks the systemic side effects of thiabendazole, which include transient dizziness, nausea, vomiting, and headaches. The topical therapy should be applied to lesions three to four times daily for five days. Topical therapy is recommended when there is a single lesion, as use on multiple areas may be irritating to the skin. Recurrence rate may be higher for topical treatment. Oral albendazole is dosed 400 to 800 mg daily for a course of three to five days.<sup>5</sup> Albendazole's side effects include nausea, anorexia, headaches, and gastrointestinal disturbances.<sup>3</sup> Both thiabendazole and albendazole are teratogenic in animals, and, therefore, contraindicated during pregnancy.<sup>3</sup> Ivermectin usually has no adverse effects when given as a single 12 mg dose and is efficacious in resolving CLM.<sup>5</sup> These four treatment options are all extremely efficacious and usually provide relief from pruritus within several days.

Clinic outreach workers visiting farmworker camps, particularly in the Southeast U.S., can identify CLM and provide workers treatment as well as information for the prevention of CLM. Prevention information should include wearing closed toed shoes or boots for work, a practice that is important for the prevention of general occupational injury and exposure to occupational toxicants. Farmworkers should also be advised to wear closed shoes when outdoors at camps.

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RECEIVED: 10/23/06  
REVISED: 12/11/06  
ACCEPTED: 01/18/07

doi:10.1300/J096v12n02\_05