

# Case Letter

## A Prolonged Incubation Period in Zosteriform *Leishmania panamensis*

To the Editor:

Leishmaniasis is a vector-borne disease caused by protozoan parasites from the genus *Leishmania*. Disease capabilities arise when sand flies transmit infection to mammalian hosts during blood feeding.<sup>1</sup> Leishmaniasis are categorized according to clinical manifestations, including cutaneous, mucocutaneous, or visceral. Cutaneous leishmaniasis typically presents with erythematous skin lesions after an incubation period of weeks to months. Systemic symptoms typically are absent and an infected person may not have any symptoms. The following case of cutaneous leishmaniasis demonstrates this typical asymptomatic presentation in a patient with a prolonged incubation period preceding the onset of cutaneous symptoms.

A 49-year-old man presented with a nontender and nonpruritic rash of 6 months' duration. The erythematous maculopapular rash followed a symmetric dermatomal distribution and originated in the cervical, thoracic, and lumbar regions, progressing to the arms and thighs bilaterally (Figure). Individual lesions were 2 cm in diameter and were noted to remit and recur without evidence of ulceration. Resolving lesions were noted to result in ecchymosis. The patient denied any associated fevers, chills, or systemic symptoms. Eighteen months prior to the onset of his symptoms, the patient had traveled to Honduras for a mission trip.

Testing for vasculitides was initiated because of the ecchymosislike pattern of the lesions and was found to be normal. Antinuclear antibody and extractable nuclear antigen titers were all within reference range. C-reactive protein and erythrocyte sedimentation rate also were nonreactive. A skin biopsy of a

new-onset lesion was obtained revealing spongiotic dermatitis. Because of the patient's travel history and persistent symptoms, the decision was made to pursue testing for leishmaniasis. Serology testing for *Leishmania* antibodies and polymerase chain reaction for antigen were found to be negative. Over the course of the workup, the patient developed additional symptoms that also were suggestive of a possible diagnosis of leishmaniasis, including lymphedema in the lower extremities and bilateral conjunctival cysts with ophthalmic dryness. Because of the high level of clinical suspicion for a diagnosis of leishmaniasis, the



Acute cutaneous *Leishmania panamensis* lesions in a dermatomal pattern (A). The lesions were erythematous with some central scaling (B).

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The authors report no conflict of interest.

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skin biopsy tissue was sent to the Centers for Disease Control and Prevention and was found to be positive for *Leishmania panamensis*. The patient was treated with intravenous liposomal amphotericin B 3 mg/kg daily for 6 days. At follow-up 2 weeks later, the patient's symptoms were completely eradicated.

Three hundred fifty million individuals worldwide are at risk for infection with leishmaniasis, with approximately 2 million new cases per year.<sup>2</sup> Leishmaniasis are categorized by a spectrum of clinical manifestations, including ulcerative skin lesions that develop at the site of the sand fly bite (localized cutaneous leishmaniasis), numerous nonulcerative nodules (diffuse cutaneous leishmaniasis), injurious mucocutaneous involvement (mucocutaneous leishmaniasis), and wide visceral involvement (visceral leishmaniasis).<sup>3</sup>

Cutaneous leishmaniasis has been reported in military personnel in the United States returning home from assignments in Iraq and Afghanistan.<sup>4</sup> Travelers returning from endemic regions, such as our patient, also are at risk for acquiring infection.

Several *Leishmania* species can cause cutaneous leishmaniasis in humans and typically are classified into Old World (cutaneous) and New World (mucocutaneous) leishmaniasis. Most of these infections subclinically occur without symptoms. The initial sign of infection typically is a localized and erythematous macule that develops after an incubation period of typically weeks to 6 months. The erythema then develops into a papule that eventually becomes an ulcerated nodule, which is the characteristic lesion of cutaneous leishmaniasis.<sup>3</sup> The ulcers usually are painless and may have some element of induration.<sup>5</sup>

Our patient presented as a diagnostic challenge for several reasons. First, his incubation period of 18 months was substantially prolonged compared to the typical incubation period of weeks to 6 months. There has been 1 documented case of a prolonged incubation period with the species *Leishmania tropica*<sup>6</sup> but no previously reported cases of prolonged incubation periods with *L panamensis* infection, as was seen in this case. Second, the distribution of the rash itself was unusual. Our patient presented with symmetric involvement in a zosterlike dermatomal pattern. It has not been documented that *L panamensis* follows a specific dermatomal pattern. Finally, the initial biopsy

and serology results for *Leishmania* species were negative. A positive culture for *L panamensis* was diagnostic in our case. This case highlights that the diagnosis of cutaneous leishmaniasis remains a challenge due to prolonged incubation periods combined with laboratory limitations in specificity.

We present a case of cutaneous leishmaniasis caused by *L panamensis* after a prolonged incubation period. The lesions were atypical in that they presented in a zosteriform pattern and did not progress to the characteristic ulceration usually seen in cutaneous leishmaniasis. Identification and proper diagnosis of cutaneous leishmaniasis in patients may present a challenge due to variations in disease presentation, prolonged incubation periods, and available diagnostic resources.

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## REFERENCES

1. Rogers ME, Ilg T, Nikolaev AV, et al. Transmission of cutaneous leishmaniasis by sand flies is enhanced by regurgitation of fPPG. *Nature*. 2004;430:463-467.
2. World Health Organization. *Control of the Leishmaniasis: Report of a Meeting of the WHO Expert Committee on the Control of Leishmaniasis, Geneva 22-26 March 2010*. Published 2010. [http://apps.who.int/iris/bitstream/10665/44412/1/WHO\\_TRS\\_949\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/44412/1/WHO_TRS_949_eng.pdf?ua=1). Accessed January 25, 2014.
3. Riethinger R, Dujardin JC, Louzir H, et al. Cutaneous leishmaniasis. *Lancet Infect Dis*. 2007;7:581-596.
4. Aronson NE, Sanders JW, Moran KA. In harm's way: infections in deployed American military forces [published online ahead of print September 14, 2006]. *Clin Infect Dis*. 2006;243:1045-1051.
5. Weigle K, Saravia NG. Natural history, clinical evolution, and the host-parasite interaction in New World cutaneous Leishmaniasis. *Clin Dermatol*. 1996;14:433-450.
6. Weiss F, Vogenthaler N, Franco-Paredes C, et al. *Leishmania tropica*-induced cutaneous and presumptive concomitant viscerotropic leishmaniasis with prolonged incubation. *Arch Dermatol*. 2009;145:1023-1026.